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ABSTRACT

This report on Compensatory Education (CE) provides a description of instructional services in basic skills and assesses educational development through the presentation of extensive data. Findings are based on data collected on 81,450 elementary school students enrolled in fifty representative schools during 1976-77 school year, and questionnaire responses of 219 district superintendents and business managers, 242 school principals, and over 3,000 teachers. The report is in four parts: (1) technical considerations (includes a description of the sample, data-collection instruments, and achievement and poverty measures); (2) services provided by regular and CE programs; (3) fund allocations and selection process from CE programs; and (4) district, school, and parent/community participation in CE programs. Student data consist of demographic and background characterisitcs, CE selection status, basic skills achievement, attitude toward school, summer activities, and attendance records for reading and math instruction. Questionnaire responses provide information on allocation of CE funds, selection policy for CE services, educational expenditures, characteristics of districts, and teachers' instructional techniques. Data analyses are presented in two sets: the first set obtained national projections of district, school, and student characteristics by applying appropriate weights to the observed sample data; the second set used the unweighted observed data to help answer thirty-three policy questions addressed in this report. A list of policy questions and supplementary tables are appended. (Author/JCD)

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THE NATURE AND RECIPIENTS OF COMPENSATORY EDUCATION

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7

TABLE OF CONTENTS

Page

List of Tables x

List of Figures xxi

Precis and Overview xxiv

Chapter

Part I. Some Technical Considerations

1. The Sample, Its Ability to Provide Population Estimates, and Population Projections of Selected Characteristics 1
   - The Samples of Districts, Schools, Principals, Teachers and Students 1
   - Information That Can and That Cannot be Projected to the Nation 4
2. The Nature of the Instruments and Measures 18
   - The Data-Collection Instruments 18
   - The Measures of Achievement, Poverty, and Selection for Compensatory Services 18

Part II. Services Provided by Regular and CE Programs

3. The Selection of Students for Compensatory Services 28
   - The Relationship Among Student Characteristics and Educational Services 30
   - Attendance Rates and Student's Economic and Educational Status 37
   - Student Characteristics and CE Selection 38
   - Student Characteristics as Predictors of CE Selection 51
   - Patterns of Concentration of CE Services Over Grade Levels 54
   - Reasons for Discontinuation of CE Services. 65
   - Delivery of Title I Services to Students in Non-Public Schools. 68
4. Receipt of Services in Regular and Compensatory Programs 70
   - Group Size and Instructors of Basic-Skill Services 70
   - Weekly Hours of Instructional Activities in Reading and Mathematics. 73
   - Instructional Approaches in Reading and Mathematics 87
   - Variations of Instructional Services Among Grade Levels 121

TABLE OF CONTENTS (Continued)

Chapter Page

5. Comparisons of Services Received by CE Selectees and Non-Selectees 128
   - Comparisons with Non-Selectees in CE Schools 128
   - Comparisons with Students in Non-CE Schools 138
   - Non-Participants' Activities While CE Services are Delivered . . . 153
6. CE Services and Funding Sources 157
   - Comparisons of Receipt of Instructional Services Among CE Selectees. 157
   - Delivery of Instructional Services and School's Receipt of CE Funds. 175
   - Distribution of CE Services by Grade Level and Funding Sources 189

Part III. Fund Allocations and Selection Process for Compensatory-Education Programs

7. Title I Fund Allocation and Expenditures 202
   - Regular and CE Per-Pupil Expenditures Under Different District Title I Allocation Practices 202
   - District Title I Expenditures for Non-Public School Students . . . 202
8. Student-Selection Procedures for CE 205
   - Selection Procedures Used by the District 205
   - CE Selection Criteria Used by Title I Schools 207
   - Selection of Students for Title I Services in Relation to District Allocation Procedure 211
   - Selection of Students in Non-Public Schools for Title I Services and Allocation of Funds 212
   - School Characteristics and Selection Rate of Regular-Achieving Students 213

Part IV. District, School, and Parent/Community Participation in Compensatory-Education Programs

9. District Characteristics and CE. 221
   - District Characteristics and Participation in Title I 221
   - Qualified Districts That Fail to Receive Title I Support 224
   - Title I Program Characteristics of Participating Districts 224

TABLE OF CONTENTS (Continued)

Chapter Page

10. School Characteristics and Compensatory Programs 231
    School Characteristics and Receipt of CE Funds 231
    Relationship of Characteristics of Schools and Their Educational Programs with District Characteristics 234
    Educational Programs and CE Services in Relation to School Characteristics 239

11. Parental and Community Involvement 246
    Parental Involvement in Educational Programs 246
    Parent/Community Involvement in Relation to Characteristics of Schools and Students 250
    Parental Involvement and Receipt of Instructional Services 261

References 268

Glossary of Terms Used in Text and Tables 270

Appendix A: Policy Questions Addressed in This Report 281

Appendix B: Supplementary Tables for Chapter 3 284

Appendix C: Supplementary Tables for Chapter 5 293

Appendix D: Supplementary Tables for Chapter 6 297

Subject Index 299

LIST OF TABLES

Table **Page**

1-1 Population Percentages and Sample Sizes of U.S. Public Schools with Grades in the 1-6 Range by Sampling Strata 2

1-2 Population Percentages and Projected Estimates of Students Enrolled in U.S. Public Schools with Grades in the 1-6 Range by Racial/Ethnic Group 3

1-3 Student Sample Sizes, Loss Rates, and Selected Missing-Data Rates by Sampling Strata 5

1-4 Projected Numbers and Percentages of Schools Receiving CE Funds . . 6

1-5 Projected School Characteristics 7

1-6 Population Projections of School Characteristics by Grade 8

1-7 Projected Percentages of Students Selected for Receipt of CE Services by Grade 9

1-8 Projected Instructional Services Received by Students 11

1-9 Population Projections of Student Characteristics by Grade 13

1-10 Projected Percentages of Districts' Title I Participation 14

1-11 Projected Educational Practices and Expenditures by Districts 15

2-1 The Names, Administration Procedures, and Response Rates for Eighteen Instruments Used in This Report 19

2-2 Numbers of Students by CE Selection Category and by Grade for Reading and Math Compensatory Services 26

3-1 Mean Reading and Math Percentile Scores of Students in CE Schools by CE Selection Status and Grade 29

3-2 Percentage of CE Selectees Who are Judged by Teachers as Needing CE for Reading and Math, by Grade 30

3-3 Intercorrelations Among Student Characteristics and the Educational Services They Receive 31

3-4 Relative Reading Level of Class by Student Characteristics 32

3-5 Relative Mathematics Level of Class by Student Characteristics 33

3-6 Length of School Year (in Number of Days) for Disadvantaged and Non-Disadvantaged Students 39

3-7 Rates of Attendance (Number of Days Attended Divided by Length of School Year) for Disadvantaged and Non-Disadvantaged Students . . . 40

LIST OF TABLES (Continued)

Table		Page
3-8	Percentage of Students Who are Male, by District Allocation Pattern, and by Reading CE Category	42
3-9	Percentage of Students Who are Minority, by District Allocation Pattern, and by Reading CE Category	43
3-10	Mean Student Economic Status by District Allocation Pattern, and by Reading CE Category	44
3-11	Percentage of Students Who had Some Form of Early Childhood Schooling by District Allocation Pattern, and by Reading CE Category	45
3-12	Mean Parental Involvement, by District Allocation Pattern, and by Reading CE Category	46
3-13	Mean Summer Intellectual Experience Score by District Allocation Pattern, and by Reading CE Category	48
3-14	Mean Reading Achievement (CTBS Debiased Percentile Scores) by District Allocation Pattern, and by Reading CE Category	49
3-15	Mean Practical Achievement Score, by District Allocation Pattern, and by Reading CE Category	50
3-16	Mean Affective Score, by District Allocation Pattern, and by Reading CE Category	52
3-17	Simple Predictor-Criterion Correlations and Percentages of Variances Reduced by Each Successive Entry of Predictors for Reading and Math CE Selection by Grade	53
3-18	Standardized Regression Weights and Multiple-Correlation Coefficients for the Prediction of Student Selection for CE Services	55
3-19	Percentage of Low-Achieving Students in CE Schools Who are Selected for CE Services	56
3-20	Mean Class Size and Percentage of Students in Class Who are CE Selectees (Calculated for CE Students Only)	57
3-21	Mean Class Size for CE Selectees and Non-Selectees	58
3-22	Number of Hours of Instruction Offered in Reading and Math, Summed for the Total School Year; for CE Students Only	58
3-23	Mean Hours per Year for Each of the Reading and Math Services Profile Items by Grade; for CE Students Only	59

LIST OF TABLES (Continued)

Table Page

3-24 Ratio of Mean Number of Hours for CE Selectees Divided by Number of Hours for Total Population, for each Profile Item by Grade 60

3-25 Mean Number of Hours of Service Offered per Year in Reading and Math by Grade and by Expenditure Level (for CE Selectees Only) . . . 62

3-26 Reading Services Profiles by Grade for CE Selectees with Various Levels of Expenditure 63

3-27 Math Services Profiles by Grade for CE Selectees with Various Levels of Expenditures 64

3-28 Percentages of Students by Grade Who Receive Guidance and Counseling or Health and Nutrition Services as Part of a CE Program 66

3-29 Percentages of Students Who Received CE in 1975-76, Classified by Need for CE, and CE Status in 1976-77 66

3-30 Percentages of Students Who Received CE Services in 1975-76 but Whose Services were Discontinued in 1976-77, Classified by Need for CE and Reason for Discontinuation of CE Services 67

3-31 Site of District Delivery of Title I Services to Students Attending Non-Public Schools (Based on 98 Title I Districts) 68

3-32 Instructional Services Provided to Students in Non-Public Schools (Based on 98 Title I Districts) 69

3-33 Time During Which Districts Provide Title I Services to Students in Non-Public Schools (Based on 98 Title I Districts) 69

4-1 Number of Hours of Reading and Math Instruction Attended per Year. 71

4-2 Class Sizes for Reading and Math Classes 72

4-3 Hours of Reading Instructional Services Received per Year for First-Grade Students, by Student Selection Category 74

4-4 Hours of Reading Instructional Services Received per Year for Second-Grade Students, by Student Selection Category 75

4-5 Hours of Reading Instructional Services Received per Year for Third-Grade Students, by Student Selection Category 76

4-6 Hours of Reading Instructional Services Received per Year for Fourth-Grade Students, by Student Selection Category 77

LIST OF TABLES (Continued)

Table Page

4-7 Hours of Reading Instructional Services Received per Year for Fifth-Grade Students, by Student Selection Category 78

4-8 Hours of Reading Instructional Services Received per Year for Sixth-Grade Students, by Student Selection Category 79

4-9 Hours of Math Instructional Services Received per Year for First-Grade Students, by Student Selection Category 80

4-10 Hours of Math Instructional Services Received per Year for Second-Grade Students, by Student Selection Category 81

4-11 Hours of Math Instructional Services Received per Year for Third-Grade Students, by Student Selection Category 82

4-12 Hours of Math Instructional Services Received per Year for Fourth-Grade Students, by Student Selection Category 83

4-13 Hours of Math Instructional Services Received per Year for Fifth-Grade Students, by Student Selection Category 84

4-14 Hours of Math Instructional Services Received per Year for Sixth-Grade Students, by Student Selection Category 85

4-15 Number of Hours per Week Devoted to Reading and Math Activities, by Grade and by CE Category 86

4-16 Percentages of Students Whose Teachers Use Various Bases for Selecting Students for Subgroups in Reading and Math Instruction . . . 88

4-17 Percentages of Students in Various Types of Subgroups for Reading and Math Instruction 89

4-18 Annual Frequencies of Instructional Subgroup Changes in Reading and Math 90

4-19 Percentages of Students Whose Teachers Use Lesson Plans for Reading and Math Instruction 92

4-20 Percentages of Students Whose Teachers Report that Instruction Varies Among Students for Reading and Math Instruction 93

4-21 Percentages of Students Whose Teachers Use Various Types of Content for Reading and Math Instruction 94

4-22 Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 1 96

4-23 Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 2 97

LIST OF TABLES (Continued)

Table | Page

4-24 Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 3 98

4-25 Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 4 99

4-26 Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 5 100

4-27 Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 6 101

4-28 Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 1 102

4-29 Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 2 103

4-30 Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 3 104

4-31 Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 4 105

4-32 Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 5 106

4-33 Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 6 107

4-34 Number of Times per Semester Reading Students Receive Feedback, by Grade and Selection Category 108

4-35 Number of Times per Semester Math Students Receive Feedback, by Grade and Selection Category 109

4-36 Hours of Reading and Math Homework per week by Grade and Selection Category 110

4-37 Use of Reading and Math Equipment by Grade and Selection Category 112

4-38 Extent of Use (1 = Not Used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 1 113

4-39 Extent of Use (1 = Not Used; 2 = Secondary Approach, 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 2 114

LIST OF TABLES (Continued)

Table		Page
4-40	Extent of Use (1 = Not Used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 3	115
4-41	Extent of Use (1 = Not Used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 4	116
4-42	Extent of Use (1 = Not used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 5	117
4-43	Extent of Use (1 = Not Used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 6	118
4-44	Minutes per Day Spent in Reading-Related Activities, by Grade and Selection Category	119
4-45	Percentages of Students Using Different Kinds of Texts in Subject-Matter Areas by Grade and Selection Category	120
4-46	Percentages of Students Whose Teachers Use Each Teaching Approach as a Major Approach in Reading, for Each Grade	122
4-47	Frequency of Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) by Grade Level	123
4-48	Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) by Grade Level	124
4-49	Hours of Reading Instructional Services Received per Year, by Grade for All Students	125
4-50	Hours of Math Instructional Services Received per Year, by Grade for All Students	126
5-1	Mean Hours per Year of Reading and Mathematics Instructional Services Received by Students in CE Schools	137
5-2	Mean Hours per Year of Reading and Mathematics Instructional Services Received by CE Selectees in CE Schools and CE Non-Selectees in Non-CE Schools, by Poverty Level of School	142
5-3	Percent of Reading Teachers Who Reported that Non-Participants are Involved in Alternative School Activities While Their CE Students Participate in Compensatory Reading Activities	154

LIST OF TABLES (Continued)

Table		Page
5-4	Percent of Math Teachers Who Reported that Non-Participants are Involved in Alternative School Activities While Their CE Students Participate in Compensatory Math Activities	156
6-1	Mean Hours per Year of Reading and Mathematics Services Received by CE Selectees	159
6-2	Mean Hours per Year of Reading and Mathematics Services Received by CE Selectees, by School Expenditure Category	160
6-3	Per-Participant CE Expenditures, by School Receipt of CE Funds	177
6-4	Amount of Reading and Math Instructional Services Offered per Year by School Receipt of CE Funds	178
6-5	Reading and Math Class Sizes by School CE Receipt Category and Enrollment Size	178
6-6	Percentage of Schools Employing Different Class Organization Practices by School CE Receipt Category and Enrollment Size	180
6-7	Percentages of Teachers Who Assign Students to Reading and Math Instruction on an Educational Basis, by School CE Receipt, and Enrollment Size	180
6-8	Placement of Students in Regular Instructional Classes by School CE Receipt Category and Enrollment Size	181
6-9	Percentages of Teachers Using Different Methods to Select Students for Reading Sub-Groups, by School CE Receipt Category and Enrollment Size	181
6-10	Percentages of Teachers Using Different Methods to Select Students for Math Sub-Groups, by School CE Receipt Category and Enrollment Size	182
6-11	Types of Reading Sub-Groups by School CE Receipt Category and Enrollment Size (Percentage of Teachers Creating the Type of Sub-Group)	183
6-12	Types of Math Sub-Groups by School CE Receipt Category and Enrollment Size (Percentage of Teachers Creating the Type of Sub-Group)	184
6-13	Frequency of Changes per Year in Reading and Math Instructional Sub-Groups, by School CE Receipt Category and Enrollment Size	186

LIST OF TABLES (Continued)

Table | Page

6-14 Availability of School Facilities by School CE Receipt Category and Enrollment Size 186

6-15 Total Number of Times per Month Audio-Visual Equipment is Used for Reading and Math Instruction, by Student Achievement Status, by School CE Receipt Category and Enrollment Size 187

6-16 Amount of Assistance from Additional Reading and Math Personnel by School CE Receipt Category and Enrollment Size 188

6-17 Percentage of Low-Achieving Students in CE Schools Who Receive CE Services, by School Funding Source 190

6-18 Per-Participant CE Expenditures for Selectees by Funding Category and by Grade Level 191

6-19 Mean Class Sizes for CE Selectees in Reading or Math 193

6-20 Mean Percentage of CE Students in Reading or Math Classes Associated with CE Selectees 194

6-21 Mean Number of Hours of Instruction Offered in Reading and Math During the School Year, by CE Selection Category 195

6-22 Reading Service Profiles by Grade and by CE Selection Category (Hours Received per Year) 197

6-23 Math Service Profiles by Grade and by CE Selection Category (Hours Received per Year) 198

6-24 Percentage of Students Receiving Guidance and Counseling Services, by CE Selection Category 199

6-25 Percentage of Students Receiving Health and Nutrition Services, by CE Selection Category 200

7-1 Average Per-Pupil Expenditures (in Whole Dollars) for Schools in Different CE Receipt Categories, and for Title I Schools in Districts with Different Title I Allocation Practices 203

7-2 Title I Expenditures for and Number of Students Served in Non-Public Schools by Size of District, for 98 Districts Participating in Title I 204

8-1 District Determination of Title I Eligibility of Public Schools by the Poverty Concentration and Size of 212 Districts Participating in Title I 206

LIST OF TABLES (Continued)

Table		Page
8-2	District Title I Selection Policy by Poverty Concentration and Size . .	208
8-3	Criteria Used by Title I Schools for Selection of CE Participants, and Selection Rates for 'Needy' and 'Non-Needy' Students	209
8-4	Criteria Used by Title I Schools for the Selection of Students for CE Services, and Differences in the Economic Status and Achievement Status of Title I and Non-Title I Students	210
8-5	District Title I Allocation Procedures for Title I Schools and Percentages of Low-Achieving and Poor Students Selected for Title I Services . . .	211
8-6	Selection Procedures for Non-Public School Students in 98 Title I Districts	212
8-7	Allocation of Title I Funds to Services for Non-Public School Students by 98 Title I Districts	214
8-8	Allocation of Title I Funds by 98 Title I Districts to Students in Non-Public Schools, by Grade	214
8-9	School Characteristics for Schools with Various Percentages of Regular-Achieving Students Receiving CE Reading Services	216
8-10	School Characteristics for Schools with Various Percentages of Regular-Achieving Students Receiving CE Math Services	217
8-11	School Grade Span and Percentage of Regular-Achieving Students Who Receive CE Reading or CE Math Services	218
8-12	Geographic Region of Schools and Percentage of Regular-Achieving Students Who Receive CE Reading or Math Service	219
8-13	Urbanism of Schools and Percentages of Regular-Achieving Students Who Receive CE Reading or Math Services	220
9-1	Use of District Performance Reviews for Non-Probationary Teachers and Principals by Title I and Non-Title I Districts	222
9-2	Incidence of Teacher Contract Issues by Title I and Non-Title I Districts	223
9-3	Average Percentage of Schools Emphasizing Educational Approaches in Title I and Non-Title I Districts	225
9-4	General Characteristics of Title I and Non-Title I Districts	226
9-5	District Participation and Non-Participation in Title I, by Concentration of Poverty	226

LIST OF TABLES (Continued)

Table Page

9-6 Allocation of Funds and Director's Rank for Participating Districts, by the District's Percentage of Students Meeting Title I Poverty Criteria (Based on 213 Title I Districts) 227

9-7 Title I Program Characteristics for Participating Districts, by the District's Percentage of Students Meeting Title I Poverty Criteria (Based on 214 Title I Districts) 229

9-8 District Per-Participant Expenditures for CE Services 230

10-1 Categories of School CE Participation and School Characteristics . . . 232

10-2 School Grade Span and Participation in Compensatory Programs . . . 234

10-3 Means, Standard Deviations, and Correlations Among 26 District, School and Educational-Program Characteristics for 242 Schools . . . 235

10-4 Means, Standard Deviations, and Correlations Among 25 School, Educational-Program, and CE Service Characteristics for 242 Schools 242

10-5 Characteristics of Educational Programs by Types of School Grade Spans 245

11-1 Involvement and Training of District Title I Parent Advisory Councils (PACs) in 213 Title I Districts 247

11-2 Procedures for Securing Parents' Suggestions and Complaints and School Receipt of CE Funds 248

11-3 School Promotion of Parental Involvement and Receipt of CE Funds . . 249

11-4 Parental Involvement in School Programs and School Receipt of CE Funds 249

11-5 Parental Involvement in Child's Education by School Category of Receipt of CE Funds 251

11-6 Extent of Parent/Community Involvement in Schools and Characteristics of the Associated Districts 253

11-7 Means of Parent/Community Involvement Measures by School Enrollment Size, by Minority Concentration, and by Poverty Concentration 255

11-8 Relationships of the Level of Parent/Community Involvement with Teachers' Qualifications, Intergroup Relations, Disruption of Instruction, and Student Mobility Rate 258

LIST OF TABLES (Continued)

Table Page

11-9 Parental Involvement in Child's Education by CE Selection Status and Grade 261

11-10 Parental Involvement in Child's Education by Family Economic Status and Race/Ethnicity 262

11-11 Parental Involvement in Child's Education in Relation to Basic Skills Achievement, Affective Measure, and Summer Activities 263

11-12 School-Level Correlations of the Average Level of Parental Involvement with the Amount of Instructional Services Offered and Received 264

B-1 Percentage of Students Who are Male, by District Allocation Pattern, and by Math CE Category 284

B-2 Percentage of Students Who are Minority, by District Allocation Pattern, and by Math CE Category 285

B-3 Mean Student Economic Status by District Allocation Pattern, and by Math CE Category 286

B-4 Percentage of Students Who had Some Form of Early Childhood Schooling by District Allocation Pattern, and by Math CE Category . . 287

B-5 Mean Parental Involvement, by District Allocation Pattern, and by Math CE Category 288

B-6 Mean Summer Intellectual Experience by District Allocation Pattern, and by Math CE Category 289

B-7 Mean Math Achievement, by District Allocation Pattern, and by Math CE Category 290

B-8 Mean Practical Achievement Score, by Allocation Pattern, and by Math CE Category 291

B-9 Mean Affective Score, by Allocation Pattern, and by Math CE Category 292

C-1 Mean Hours of Reading Instructional Services Received by Selectees and Non-Selectees in CE Schools, by Achievement Level 293

C-2 Mean Hours of Math Instructional Services Received by Selectees and Non-Selectees in CE Schools, by Achievement Level 294

C-3 Mean Hours of Reading Instructional Services Received by Selectees and Students in Non-CE Schools 295

LIST OF TABLES (Continued)

Table — Page

C-4 Mean Hours of Math Instructional Services Received by Selectees and Students in Non-CE Schools 296

D-1 Mean Hours per Year of Reading Instructional Services Received by Regular and CE Per-Pupil Expenditure Level, CE Type, and Grade . . . 297

D-2 Mean Hours per Year of Math Instructional Services Received by Regular and CE Per-Pupil Expenditure Level, CE Type, and Grade . . . 298

LIST OF FIGURES

Figure — Page

1 Total Hours of Instruction by Grade per Year xxix

2 Hours of Individual and Small-Group Instruction by Grade per Year . . xxx

2-1 Projected Percentages of Grade 1-6 'Low Achievers' in Reading (Math) by Region, Based on the 33rd Percentile Definition of Low Achievement 24

5-1 Descriptions of the Ten Instructional Settings for Reading and Math Services 130

5-2 Mean Yearly Hours of Reading Instructional Services Received by CE Selection, Achievement Level, and by Grade (Based on Students in CE Schools) 131

5-3 Mean Yearly Hours of Math Instructional Services Received by CE Selection, Achievement Level, and by Grade (Based on Students in CE Schools) 132

5-4 Mean Hours per Year of Reading Instructional Services Received by Students in CE Schools (Type of Teacher) 133

5-5 Mean Hours per Year of Reading Instructional Services Received by Students in CE Schools (Size of Instructional Group) 134

5-6 Mean Hours per Year of Mathematics Instructional Services Received by Students in CE Schools (Type of Teacher) 135

5-7 Mean Hours per Year of Mathematics Instructional Services Received by Students in CE Schools (Size of Instructional Group) 136

LIST OF FIGURES (Continued)

Figure Page

5-8 Mean Hours per Year of Reading Instructional Services Received by CE Selectees in Low-Poverty CE Schools, and Non-Selectees in Low Poverty Non-CE Schools (Type of Teacher). 143

5-9 Mean Hours per Year of Reading Instructional Services Received by CE Selectees in Medium-Poverty CE Schools, and Non-Selectees in Medium-Poverty Non-CE Schools (Type of Teacher) 144

5-10 Mean Hours per Year of Reading Instructional Services Received by CE Selectees in Low-Poverty CE Schools, and Non-Selectees in Low-Poverty Non-CE Schools (Size of Instructional Group) 146

5-11 Mean Hours per Year of Reading Instructional Services Received by CE Selectees in Medium-Poverty CE Schools, and Non-Selectees in Medium-Poverty Non-CE Schools (Size of Instructional Group) 147

5-12 Mean Hours per Year of Mathematics Instructional Services Received by CE Selectees in Low-Poverty CE Schools, and Non-Selectees in Low-Poverty Non-CE Schools (Type of Teacher) 149

5-13 Mean Hours per Year of Mathematics Instructional Services Received by CE Selectees in Medium-Poverty CE Schools, and Non-Selectees in Medium-Poverty Non-CE Schools (Type of Teacher) 150

5-14 Mean Hours per Year of Mathematics Instructional Services Received by CE Selectees in Low-Poverty CE Schools, and Non-Selectees in Low-Poverty Non-CE Schools (Size of Instructional Group) 151

5-15 Mean Hours per Year of Mathematics Instructional Services Received by CE Selectees in Medium-Poverty CE Schools, and Non-Selectees in Medium-Poverty Non-CE Schools (Size of Instructional Group) 152

6-1 Mean Hours per Year of Reading Instructional Services Received, by Categories of CE Selectees in CE Schools 162

6-2 Mean Hours per Year of Reading Instructional Services Received, by Categories of CE Selectees in Schools with Low Regular and Low CE Expenditures 163

6-3 Mean Hours per Year of Reading Instructional Services Received, by Categories of CE Selectees in Schools with Low Regular and High CE Expenditures 164

6-4 Mean Hours per Year of Reading Instructional Services Received, by Categories of CE Selectees in Schools with High Regular and Low CE Expenditure 165

LIST OF FIGURES (Continued)

Figure | Page

6-5 Mean Hours per Year of Reading Instructional Services Received, by Categories of CE Selectees in Schools with High Regular and High CE Expenditures 166

6-6 Mean Hours per Year of Mathematics Instructional Services Received, by Categories of CE Selectees in CE Schools 169

6-7 Mean Hours per Year of Mathematics Instructional Services Received, by Categories of CE Selectees in Schools with Low Regular and Low CE Expenditures 170

6-8 Mean Hours per Year of Mathematics Instructional Services Received, by Categories of CE Selectees in Schools with Low Regular and High CE Expenditures 171

6-9 Mean Hours per Year of Mathematics Instructional Services Received, by Categories of CE Selectees in Schools with High Regular and Low CE Expenditures 172

6-10 Mean Hours per Year of Mathematics Instructional Services Received, by Categories of CE Selectees in Schools with High Regular and High CE Expenditures 173

11-1 Level of Parent/Community Involvement and Urbanism of the Schools 256

11-2 Reading Services Received by Students in Grade 6, for Schools with High and Low Individual Parental Involvement 265

11-3 Mathematics Services Received by Students in Grade 6, for Schools with High and Low Individual Parental Involvement 266

A PRECIS OF THE SUSTAINING EFFECTS STUDY
AND
AN OVERVIEW OF THE PRESENT VOLUME

The Sustaining Effects Study

In response to questions about education policies, SDC has studied compensatory education (CE); its nature, quantity, and environment; its sustained effects; and its generality, in a large study called: The Sustaining Effects Study. This thorough study will result in a series of reports from the following substudies:

The Longitudinal Study. In the Longitudinal Study, the educational achievements of children will be assessed in the fall and spring for three consecutive years. The children will take an achievement test in reading and mathematics, a functional literacy test, and a measure of attitude toward school and toward themselves as students. The amount and nature of instruction in reading and mathematics will be determined for each student four times during the school year. In addition, teachers and principals will report on their practices of instruction and teaching. Thus, it will be possible not only to assess student growth over a three-year period, but to relate this growth to the kinds and amounts of instruction being received.

The schools in the study were drawn from three different groups. The Representative Sample of schools is a sample carefully drawn to represent all of the nation's public schools having some of the grades one through six. A second group of schools, the Comparison Sample, is composed of schools that have large proportions of students from poor homes but do not receive special funds to offer CE services. The third group is the Nominated Sample, composed of schools nominated because their educational programs had promise of being effective for low-achieving students. During the first year of the study, data were collected from 328 schools and about 118,000 students.

The Cost/Effectiveness Study. Information is being obtained on the resources and services to which each student is exposed during reading and mathematics instruction. Cost estimates will be generated on the basis of this information. Because the effectiveness of the instructional programs is to be determined in the Longitudinal Study, it will then be possible to relate the effectiveness to the cost of each program.

The Participation Study. The purpose of the Participation Study, is to determine the relationships among economic status, educational need, and instructional services received. The educational achievement of the students and the services they receive will be obtained in the Longitudinal Study, but the refined measures of economic status will be obtained in the Participation Study. A random sample of over 15,000 students was drawn from the schools in the first-year Representative Sample and visits were made to the homes of these students. During the visits, information was collected on the economic level of the home and on the parents' attitudes toward their child's school and learning experiences. Thus, the level of student achievement and services received can be related to the economic level of the home from which the student comes.

The Summer Study. The Sustaining Effects Study also examines the effectiveness and cost-effectiveness of summer-school programs. RMC Research, responsible for conducting the summer study, is investigating questions about summer school. Information about the 1977 summer school experiences of the SES students is being combined with other SES data. The resource cost model, developed for the regular-year cost-effectiveness studies, is being adapted to the needs of the summer school study.

The Successful Sites Study. This study is to identify and describe the instructional practices and contexts that appear to be effective in raising the reading and math achievements of educationally disadvantaged students. In-depth observational and interview data will be collected from approximately 50 schools that are participating in the Sustaining Effects Study.

Overview of the Present Volume

This, the fifth technical report of the Sustaining Effects Study (SES), presents extensive tables of findings based on data collected during the 1976-1977 school year in the Representative Schools that participated in the first-year study. Data consists of questionnaire responses of 219 district superintendents and business managers, 242 school principals, and more than 3,000 teachers. These responses provided a wide variety of information on allocation of CE funds, selection policy for CE services, educational expenditures, characteristics of districts, schools and their regular and CE programs, and teachers' instructional practices. Data was also collected for 81,450 students in grades 1-6. They comprise demographic and background characteristics, CE selection status, basic skill achievement, attitude toward school, summer activities, and attendance records for reading and math instruction. The primary emphasis of the data collection is on description of instructional services in basic skills delivered to students, and assessments of their educational development.

The population of interest to the study is the nation's twenty million students in grades 1-6 who are enrolled in the 62,534 public schools administered by 14,681 districts. The data analyses for this report were organized in two ways. The first set of analyses obtained national projections of district, school, and student characteristics by applying appropriate weights to the observed sample data. The second set of analyses employed the unweighted observed data to provide information pertaining to the 33 policy questions addressed in this report. The policy questions are listed in Appendix A.

Among the wide scope of analytical approaches that could have been taken to examine these data, we employed only those deemed most appropriate for offering answers to the policy questions of concern. Our aim is to present a summary of the relevant information accumulated so far in the SES data base for the use of policy makers and analysts.

National Projections

The district projections indicate that almost all of the 14,681 public school districts (93.7%) participate in the Title I program. In determining the eligibility of the schools for Title I participation, the districts generally use multiple criteria involving free or reduced-price lunch counts (78.0%), AFDC enrollment (58.9%), census data on family income (44.9%), counts of neglected or delinquent children (30.5%), or free or reduced-price breakfast counts (13.6%).

The school projections reveal that approximately two-thirds of the 62,534 schools in the population receive Title I funds, and an additional one-fifth receive CE funds from other sources

The student projections show that about 25 percent of the twenty million students attending public schools in Grades 1-6 receive some kind of CE in reading and/or mathematics. The percentage peaks to approximately 30 percent at Grade 2 and then declines to about 20 percent at Grade 6. Title I alone funds 49 percent of the CE students, while 41 percent are funded solely by other sources – with 10 percent being funded jointly. Of all students selected for CE services, 53 percent receive both reading and math instruction, 37 percent receive only reading services, and 10 percent receive math services only. For students who are selected to receive services funded *solely by Title I*, 39 percent receive both reading and math instruction, 50 percent receive only reading instruction, and 11 percent receive only math instruction. Numerous additional national projections may be found in Part I of the report, along with a description of the samples and instruments used to collect data. An index is provided at the end of the report to aid readers in finding specific areas of concern and variables in which they may be especially interested.

Services Provided by Regular and Compensatory Education Programs

Seventeen questions and analysis summaries relating to instructional services are summarized below. Additional analysis details concerning these questions may be found in Part II of the report.

Among schools offering compensatory services, do the most needy students receive compensatory services?

Across all grades, CE selectees have lower average percentile scores at the fall pretesting for both reading and math than do non-selectees. The fall percentiles average about 32 for the selectees and 53 for non-selectees. In terms of teacher judgments of student current needs for CE, approximately 70 percent of the selectees were judged as needing CE while only 19 percent of the non-selectees were so judged. For both reading and math, the majority of CE selectees are indeed considered educationally needy by their teachers.

How are characteristics of educational services associated with student characteristics?

Only weak relationships were found between total hours per year of instructional services received and student characteristics. However, receipt of certain specific instructional services does relate to student characteristics. Minority students, students from families of low economic status, and students with low achievement level at the beginning of the school year tend to receive more hours per year of small-class (less than 7 students) instruction by regular teachers, instruction by special teachers, and assistance by paid aides. In addition, receipt of health and nutrition CE services is negatively correlated with student majority status, family economic status, and achievement scores. Looking at student attendance records during the school year, the results show that low-achieving students from families with low economic status typically have lower attendance rates than regular-achieving students from families with high economic status.

How are characteristics of students related to their CE selection status?

Student CE selection category and district policy of allocating non-Title I CE funds were jointly employed to define ten CE selection groups. The group of Title I selectees in districts that use non-Title I funds to serve more students has a higher percentage of minority students, lower mean for family economic indicator, and lower average achievement scores than other groups of students. Compared with the sample composition, there are proportionately more minority students selected for CE services than non-minority students. Similarly, there is a slight indication that more male students are selected to receive CE services. In general, CE selection status has little relationship with student attitudes toward school, early childhood experience, summer intellectual experience, or parental involvement.

What student characteristics predict whether a student is selected for CE services?

Student need for CE as judged by the teacher, receipt of CE services in the previous year, achievement percentile scores, non-English language spoken in the home, and a proxy for the family economic measure were employed as predictors for student's selection for CE services. Teacher judgments of current need for CE and receipt of CE in the previous year were found to be useful predictors. The additional contributions of the other three predictors are comparatively small.

What is the pattern of concentration of compensatory services over grade level?

There are greater percentages of low-achieving students selected for reading than for math CE services, but the percentages do not vary much across grades. CE selectees tend to attend classes of smaller sizes than those for non-selectees, but there are no substantial differences in this tendency among the grades. With respect to the instructional services received, CE selectees in grades 3-6 on the average receive more total hours per year of reading and math instruction than do non-selectees. However, the two groups do not differ in these respects at grades 1 and 2. The only consistent trend found in receipt of specific types of instructional services is that CE selectees receive an increasing amount of assistance – relative to that for the entire population – by paid aides through grade 5. Overall, there are only small differences in the concentration of CE services among grades.

Do CE selectees receive compensatory reading and mathematics services for more than one year and, if not, what is the reason for discontinuation?

Approxi [illegible], two thirds of the students receiving reading or math CE in 1975-1976 were again selected for such services in 1976-1977. The teachers report that 90 percent of the reading CE repeaters and 85 percent of the math CE repeaters are currently in need of compensatory services.

Where the teacher's knowledge and the Compensatory Education Roster are consistent, the data indicate that most of the CE-discontinued students were judged as not needing CE services and were not receiving services because they no longer qualified. There were few CE recipients whose services were discontinued because of funding cut-backs. It should be noted that there is a considerable discrepancy between teacher knowledge of student receipt of CE and the school coordinator's report of their CE selection status.

How and what kinds of Title I instructional services are delivered to students in non-public schools?

Of the 214 districts participating in Title I, 98 reported delivering CE services to students in non-public schools. For an overwhelming majority (91 percent) of these districts, Title I services were delivered to the students at the non-public school itself. Virtually all of the 98 districts (99 percent) provided reading services, while only about two-thirds of them provided math services. Most of the districts (94 percent) delivered these services during normal school hours. Title I services were also provided to students in non-public schools during the summer months by 15 percent of the districts.

Are CE selectees instructed in basic skills by different instructors and different group sizes for different amounts of time?

No clear distinction in total hours of reading or math services received was found between CE selectees and non-selectees at the first two grades. For the other grades, CE selectees in general, and Title I selectees in particular, receive more hours per year of reading and math instructional services than do their non-CE peers. Figure 1 illustrates the comparison of the average total hours of reading and math services received by Title I selectees with the respective hours projected for the population of the SES.

Examining the services received in specific instructional settings, CE selectees receive more hours of instruction from special teachers than non-selectees. On the average, CE selectees also receive more hours of instruction in small groups with classroom teachers, and assistance from paid aides, than their non-CE peers. Figure 2 shows the combined hours of services received by Title I selectees and the general population in four settings: with classroom teachers in a group of 1-6 students, with special teachers in a group of 1-6, with special teachers in a group of 7 or more, and with assistance by paid aides.

How much of CE selectees' and non-selectees' time per week is devoted to reading and mathematics?

For the six grades, the mean number of hours of instruction ranges from 5 to 9 hours per week for reading, and from 5 to 6 hours per week for math. The weekly hours of reading instruction decreases steadily with grade level, but those for math do not vary much with grades. In the upper grades, CE selectees receive more reading and math instruction per week than do their non-selectee peers.

What instructional approaches in reading and mathematics comprise educational programs for CE selectees and non-selectees?

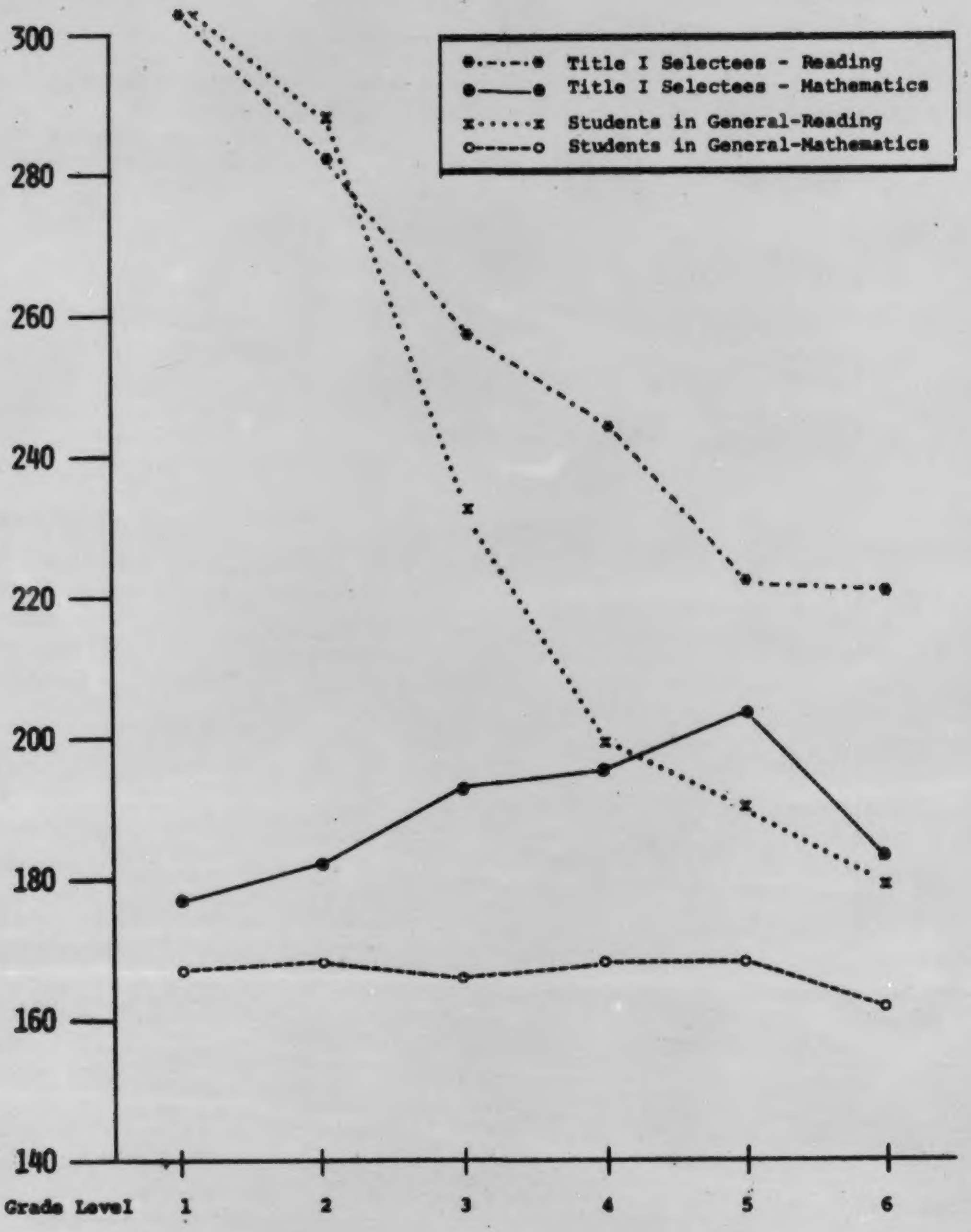

Figure 1

Total Hours of Instruction by Grade Per Year

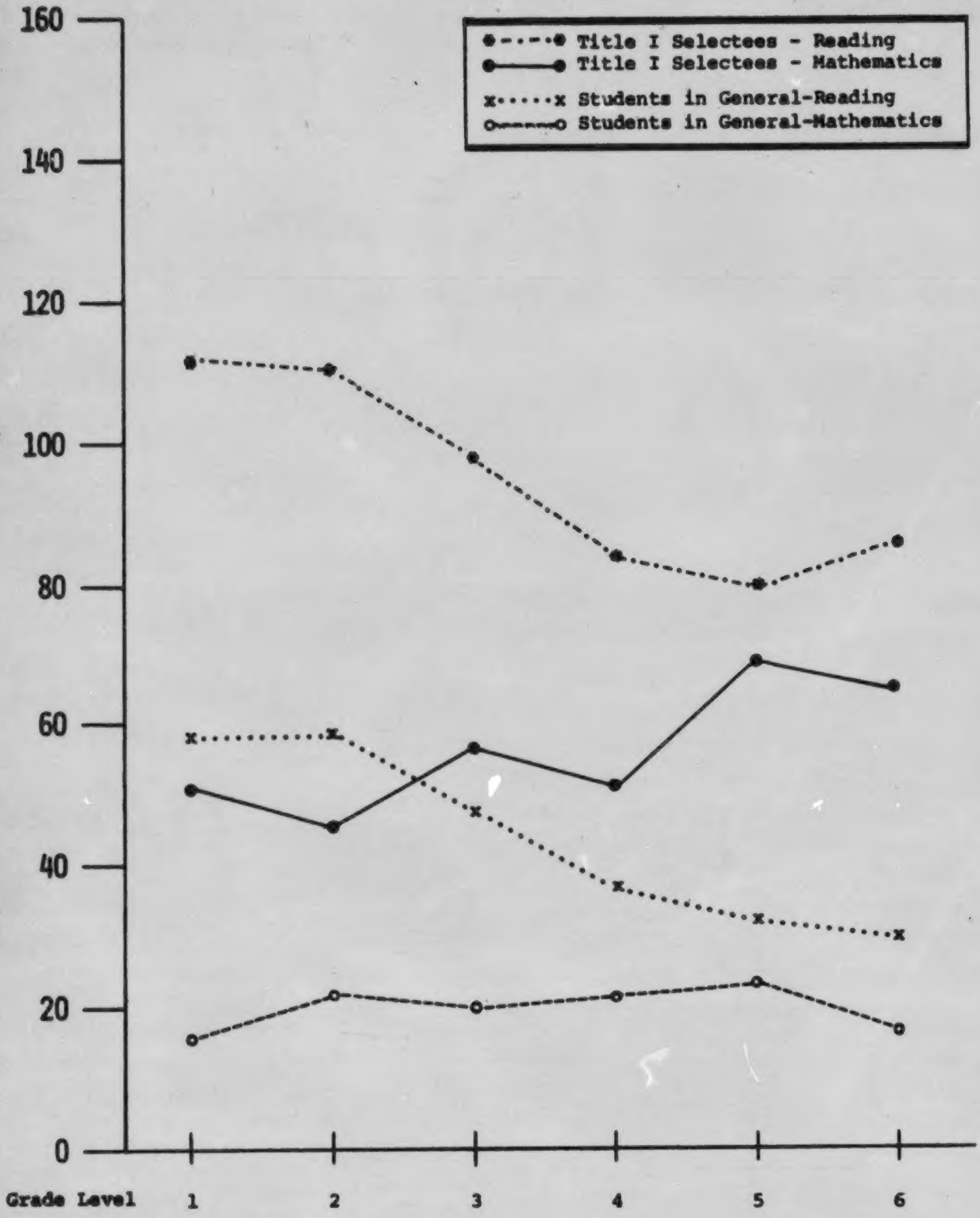

Figure 2

Hours of Individual and Small-Group Instruction by Grade Per Year

xxx

In general, there are no substantial differences among students in different CE selection categories with regard to their teachers' instructional subgrouping practices, use of lesson plans, extent of individualization in instruction, frequency of feedback, and assignment of homework. Creation of subgroups for instruction is more common in reading than in math, but changes of instructional subgroups occur more frequently in math than in reading. The commonly used lesson plans are general ones that provide broad objectives and categories of activities. The course content is often based on a combination of approved curriculum and individual needs.

The frequencies of feedback provided to students in the forms of letter grades or information on strengths and weaknesses are fairly high (each type is given on the order of once or twice a week). More homework is assigned in math than in reading. On the average, less than an hour per week of homework is assigned in reading. Usage of audio-visual equipment in group instruction or by individual students is more frequent for reading than for math.

How do instructional services and learning activities differ among grade levels?

The total hours-per-year of reading instructional services received decreases steadily with grades. In terms of proportional distributions of the total hours to specific service items, there is a tendency for students in the upper three grades to receive proportionately more reading instruction from classroom teachers in groups of 14 or more students and less from classroom teachers in groups of 13 or fewer, than for students in the lower grades. The percentages of time spent in instruction by special teachers, and assistance by aides, do not vary appreciably with grades. On the other hand, the variation in total hours of math instructional services across grades is small. Time allocations to specific service items show little differences among grades in most cases.

Concerning the learning activities, there is a by-grade decrease in emphasis on basic reading skills, e.g., letter-sound correspondence, identifying letters, and blending sounds for letters to form words, while the activities focusing on syllabification, use of context clues, and use of references increase in emphasis. For math, emphases on solving word problems and number theory increase with grades whereas emphases on learning about sets and number sentences decrease.

How do instructional services received by CE selectees compare to those received by non-selectees in CE schools?

The major differences in reading and math instructional services received by CE selectees and non-selectees in CE schools are as follows:

- For grades 3 to 6, CE selectees on the average receive more hours of reading and math instructional services during the school year. For grades 1 and 2, the differences between the two groups are small.

- CE selectees in general receive substantially more hours of reading and math instruction from special teachers.

- CE selectees receive more hours of reading and math instructional services in groups of less than 14 students, and less in groups of 14 or more.

How do instructional services received by CE selectees compare to those received by students in non-CE schools?

The results of the comparisons between instructional services received by CE selectees and those by students in non-CE schools are summarized as follows:

- On the average, CE selectees receive more reading and math services per year.
- CE selectees consistently have more hours of instruction by special teachers across all grades. Students in non-CE schools typically receive negligible amounts of such instruction.
- For the schools of low poverty concentration, CE selectees tend to receive more hours of instruction in groups of 13 or fewer students, and less in groups of more than 13 students, compared with students in non-CE schools.

Combining the findings for this and the preceding questions, the different services received by CE selectees and non-selectees are primarily observed in two respects:

- CE selectees receive more instruction by special teachers.
- CE selectees receive instruction in smaller groups.

What, if any, activities are missed due to participation in CE reading and mathematics activities?

About 91 percent of the reading teachers who have CE students reported some kinds of activities missed by their CE students due to participation in compensatory reading activities, with an average of about 2 different kinds mentioned per teacher. Of these teachers, 87.5 percent mentioned other reading or language arts activities as being missed. In addition, math activities, activities related to other subject areas, and other student-selected activities were also reported as the activities participants missed by a considerable number of teachers. These findings suggest that, across grades, CE services are delivered during regular instructional hours with different kinds of activities for the participants. The results for math are similar to those for reading. Of the math teachers who indicated that their CE students missed some kinds of activities, 82.4 percent reported that non-participants were engaged in other math activities during math CE hours.

Do CE programs funded by different sources provide different instructional services?

Title I selectees in general receive more total hours per year of reading and math instructional services than other CE selectees. The advantage is more clearly shown in receipt of instruction by special teachers. For both reading and math, Title I selectees consistently have the highest mean hours of such instruction, while Other-CE selectees in Title I schools have the lowest means, and CE selectees in Other-CE schools have means in between. The comparisons among these three groups of CE selectees in terms of services received in different sizes of instructional group do not reveal a clear picture.

Taking per-pupil regular and per-participant CE expenditures into account, analyses of the data show an interaction effect among levels of regular and CE expenditures, student CE selection category, and grade level. Overall, the data suggest that Title I selectees tend to receive a greater amount of total reading instruction than the other two groups of CE selectees if their schools have high per-participant CE expenditures. For math, this tendency is evident only if the schools are in the low regular/high CE expenditure category. For both reading and math, Title I selectees consistently receive more hours per year of instruction by special teachers than Other-CE selectees only if they attend schools in the low regular/high CE expenditure category. The results for other expenditure categories are complex and less systematic.

How do the delivery and nature of instructional services differ in schools with different CE funding sources?

Title I schools have higher average per-participant CE expenditures in reading and math than do Other-CE schools. The difference between Title I and Other-CE schools is small in reading ($8), but considerably larger in math ($112). At the school level, the average total reading/math instructional hours per year offered to all students does not differ significantly among Title I, Other-CE, and non-CE schools. Title I schools generally have the smallest reading classes among the three types of schools, whereas the differences in class size for math are small.

There are no substantial differences among the three types of schools in their practices of student placement for regular instruction, teachers' creation of instructional subgroups, and student exposure to audio-visual equipment for instruction. But CE schools are more likely to have reading and math resource centers — especially for reading — than are non-CE schools. Teachers in CE schools, Title I in particular, typically receive more hours per week of assistance from special teachers and aides/assistants in their reading and math teaching activities, compared with teachers in non-CE schools.

Does the distribution of CE services over grade levels vary with the funding source of CE programs for which the student is selected?

The percentage of low-achieving students who were selected to receive CE services in each grade is larger for Title I schools than for schools that receive only non-Title I CE funds. For both reading and math, Title I programs have more expenditures per participant. Title I selectees are generally in classes that have smaller percentages of CE students in them, compared with the classes that Other-CE selectees attend. More total hours per year of instruction are offered to Title I selectees than to Other-CE selectees. Overall, Title I selectees also receive considerably more instruction by special teachers than do Other-CE selectees. All of these findings are consistent across grades. With respect to non-instructional services, reading and math CE selectees in all grades are more likely to receive CE services in health and nutrition than are non-selectees.

Funding Allocations and Selection Procedures for Compensatory Education Programs

Results of the analyses for seven policy questions relating to CE fund allocations and selection procedures are summarized below. Additional information concerning these questions may be found in Part III of the report.

What are the average per-pupil expenditures for Title I selectees in schools under different district allocation practices?

The average per-participant Title I expenditure reported by Title I schools in the sample is $416.00. When the schools were classified on the basis of different district fund allocation practices, the following results were obtained:

Allocation Practice Based on	Number of Schools Reporting	Average Title I Per-Pupil Expenditure
Total school enrollment	16	$284
Equal funding for all participating schools	23	374
Poverty ranking and number of low achievers	23	404
Percentage of low-income students	7	439
District level project	56	439
Number of low-achievers only	29	479
Total	154	$416

The average Title I per-participant expenditure is about 35 percent of the average per-pupil regular expenditure.

What are district Title I expenditures for students in non-public schools and how many such students are served?

Ninety-eight districts that participate in Title I (45%) reported expenditures for students in non-public schools. For these districts, the average annual expenditure was $125,491 and the average number of students served was 297, for an average of $423 per student served.

How do districts interpret the mandated Title I selection criteria for schools and students to participate?

Free or reduced-price lunch counts, and aid to families with dependent children (AFDC), are used most often by districts, usually in combination with other criteria, to determine a school's eligibility for Title I. These two criteria are most likely to be used by high poverty and/or large school districts. In terms of all criteria used by a district, free or reduced-price lunch counts alone was used most often by the districts (22 percent), followed by AFDC enrollment alone (15 percent), and the combination of these two (14 percent). Over half of the Title I districts (53 percent) adopted a policy that selects students for Title I services primarily on the basis of standardized achievement tests. Selection through equal weighting of test scores and teacher judgment was reported by 44 percent of the Title I districts. The remaining 3 percent of the districts select students for services primarily through locally developed tests or teacher judgment alone.

What criteria are used by Title I schools for selection of students to participate and how are the selection policies related to the types of students actually selected to receive Title I services?

Test scores are used in some way by a majority of the Title I schools in the selection of their students to receive CE services. Among the students who attended Title I schools, and were judged to be in need of CE services by their teachers ('needy' students), 96 percent were associated with a selection policy that involves the use of test scores. Another CE selection criterion used often by Title I schools is teacher recommendation.

When test scores are used jointly with membership in target groups as the selection criteria, a higher percentage of 'needy' students is selected for services than when other methods are used. However, this method also results in a higher selection rate for 'non-needy' students. Regardless of what methods are used, students who are selected to receive Title I services always have lower averages of family economic measure and achievement percentile scores than do those not so selected. Differences between these two groups are largest when test scores and teacher recommendation are used as the joint selection criteria.

How do procedures used to allocate Title I funds to participating schools within districts affect selection of students for Title I services in the Title I schools?

The percentages of poor and low-achieving students selected for Title I services are highest when allocation is based on the school's percentage of the district's low-income students. However, only 7 of the 157 Title I schools employ such a procedure. These percentages are second highest in the schools whose districts allocate Title I funds based on the number of low-achieving students in the school, and lowest when the districts' allocation procedure is based on equal funding for participating schools.

How are students in non-public schools selected to receive Title I services and how are funds allocated to those services?

About two-thirds of the Title I districts serving students in non-public schools use achievement tests as the primary basis for selecting students to participate, while approximately one-third use an equal weighting of tests and teacher judgment. Eighty-four percent of the Title I districts that serve students in non-public schools use Title I funds for the purchase of instructional materials. The purchase of testing materials is also frequently funded (71%). Most districts allocate Title I funds to all elementary grades in non-public schools, with slightly higher frequencies in the lower grades.

How do schools that select a large proportion of their regular achievers for CE services differ from schools that select a low proportion?

Compared with schools that have lower selection rates for regular achievers, schools with 21 percent or more of their reading/math regular achievers selected for CE services typically have substantially larger percentages of minority and poverty students. In addition, the extent of parent/community involvement is higher in schools with 41 percent or more of reading regular achievers selected for CE than those with 10 percent or less. Schools that operate primarily upper grades (5 and 6) are less likely to select regular achievers for CE services than other elementary schools. There is a tendency for schools in the Midwest and Central regions to have lower selection rates for regular achievers, in comparison with schools in the Pacific Southwest.

District, School, and Parent/Community Participation in Compensatory Education Programs

Results of analyses for nine policy questions that address participation in CE programs are summarized below. Additional information concerning these questions may be found in Part IV of the report.

What are the characteristics of districts that receive Title I funds and that do not receive them?

Because only five of the districts in the sample do not participate in Title I, general conclusions regarding the differences between participating and non-participating districts cannot be drawn with confidence. However, there is evidence that they differ in two areas: non-Title I districts generally have smaller average daily attendance and a much lower percentage of students whose family income is below the poverty level than the Title I districts.

Do some districts that qualify for Title I funds fail to obtain them, and if so, why?

Based on the very small sample of non-participating districts, the data suggest that few, if any, districts that qualify and want to participate in Title I fail to obtain Title I funds.

What are characteristics of district Title I programs in participating districts?

A large proportion (43.7 percent) of districts participating in Title I receive no CE funds from sources other than Title I. The percent of time that Title I coordinators devote to Title I program activities increases with the district's percentage of students meeting Title I criteria, reaching an average of 66 percent for the high-poverty districts, i.e., those with more than 25 percent of poverty students. Most Title I districts have participated in Title I continuously since its inception, with an average of 11 of the possible 12 years. On the average, Title I districts allocate $392 to each participant – higher than that found for Other CE programs.

What are the characteristics of the schools that receive and that do not receive CE funds?

CE schools are different from non-CE schools in having larger grade 1-6 enrollments, higher poverty concentrations, more low-achieving students, and less education of students' parents. Instructional programs of the CE schools also reflect a greater degree of control and participation in decision-making by their respective districts, and the staff-to-student ratio is typically higher in CE schools than in non-CE schools. In addition, the intermediate and middle grade schools (those that operate primarily grades 5 and 6) are less likely to have CE funds available to them than other elementary schools.

How are the characteristics of schools and their educational programs related to district characteristics?

Schools in larger districts tend to have more experienced and better trained principals and teachers. Schools in districts that have larger percentages of administrative staff tend to have more staff per 100 students, principals showing weaker instructional leadership, and less control over instructional programs by their districts. The average level of experience and training of the schools' teachers is correlated positively with parent/community involvement in the school, and with the schools' emphasis on teacher training. Schools with proportionately larger staffs tend to involve students more in instructional decision-making. Furthermore, schools whose principals show stronger leadership in their instructional programs are likely to have their teachers, students, and parents participate in decision-making concerning instructional matters.

How are the characteristics of educational programs and CE services related to school characteristics?

The principal's instructional leadership in the educational program correlates positively with school enrollment in grades 1-6, and with school minority concentration. Teachers who are more frequently involved in instructional decision-making express greater satisfaction and report more harmony among the staff. There is some indication that individualized approaches in instruction are used to accommodate the needs of low-achieving students, based on an observed correlation of 0.24 between the use of individualized instruction and the percentage of low-achievers in the school.

Schools with teachers and principals who believe that instructional practices can have an effect on achievement show a strong tendency ($r = 0.69$) to have instructional programs that are structured. Teachers in these schools frequently use specific lesson plans in their instruction and provide frequent performance feedback to their students. The amount of reading instruction offered per year to students has little relationship with school characteristics. On the other hand, the amount of math instruction offered is appreciably correlated with the school percentage of low-achieving students, poverty concentration, and minority concentration ($r = 0.32$, 0.30, and 0.24, respectively).

How are parents involved in district and school Title I programs and in school educational programs in general?

Almost 95 percent of the districts participating in Title I have a Parent Advisory Council (PAC) that engages in some aspect of planning the district Title I program. Members of most PACs receive some training to make them more effective advisors and planners. Most schools (about three-fourths of them), regardless of whether they have CE programs, formally encourage parent participation and involvement, but the parents do not play a major role in instructional decision-making. Parents of students participating in Title I or Other-CE programs are not notably more involved in their children's schooling than parents of non-CE students.

What district, school, and student characteristics are related to degree of parent/community involvement?

Schools associated with large districts have more parent/community involvement than those in small districts. Large schools and schools with higher minority concentrations have more parent/community involvement. At the student level, parents of high-income, white, and high-achieving students are more involved in their childrens' education.

Are the services students receive related to their parents' involvement in the educational program?

Analyses revealed no relationship between the level of parental involvement and the amount or kind of reading and math instructional services received by students.

PART I. SOME TECHNICAL CONSIDERATIONS

CHAPTER 1. THE SAMPLE, ITS ABILITY TO PROVIDE POPULATION ESTIMATES, AND POPULATION PROJECTIONS OF SELECTED CHARACTERISTICS

This fifth technical report from the Sustaining Effects Study is essentially descriptive. It provides national projections of sample characteristics so that it is possible to gauge the nature, extent, and distribution of compensatory-education (CE) programs for various types of students in various types of districts and schools. Contrasts are drawn between districts, schools, and students participating in CE programs, and those *not* participating in such programs.

The sample of schools was drawn in a stratified-random manner to ensure representation of many different kinds of schools. The stratification and selection was designed to provide the sample with an adequate number of schools with students likely to receive CE services. The characteristics of the districts, schools, and students can then be weighted to approximate national characteristics with extreme accuracy, providing not only estimates of the state of affairs, but also refined measures of the precision of the estimates. The projections to a national profile and the computation of indicators of precision, depend upon both random sampling and knowledge of such disproportionalities introduced by the stratification process. To a somewhat different purpose, when groups of districts, schools, or students are contrasted, each group should come from the random sample and be represented by a number of cases sufficient for the calculation of stable statistics. Because the national projections demand representation and the contrasts can be made accurately with a large representative sample, all the data underlying this report came from The Representative Sample, which is to be distinguished from other samples (Comparison Sample, Nominated Sample) used in various aspects of the entire Sustaining Effects Study. The complete sampling plan, how it was carried out, and the various tests for bias are reported in detail by Hoepfner, Zagorski, and Wellisch (1977).

The Sample of Districts, Schools, Principals, Teachers, and Students

The first-year Representative Sample was selected from respondees to a survey of 5010 (initial pool = 5035) public schools in the U.S. that operate at least one grade in the 1-6 range, with the exception of a small number of schools not considered because: (1) most of their instruction was specialized (ESL programs, programs for the handicapped, programs for the neglected, delinquent or migratory, and programs for the bilingual); (2) they anticipated being closed or losing the grades of interest within the year; (3) they were participating in the NIE Demonstration Project (National Institute of Education, 1977); or (4) they refused to participate. Approximately 8 percent of all the schools originally sampled were such exceptions. The final first-year Representative Sample was composed of 242 schools in 219 different districts. Several tests were then made (see Hoepfner, Zagorski, and Wellisch, 1977) of the adequacy of the sample, indicating the following:

- Projected percentages of schools in seven categories of urbanism were not significantly different from percentages obtained by a larger sample. There was no evidence of bias in school location.

- There were no significant differences between projections from the Representative Sample and those from a larger sample in: the grade spans of the schools, the sources from which they receive funds for CE programs, the percentage of students reading below grade level, the percentage of schools with combined grades, and the percentage offering summer school.

- Projected percentages of students by racial/ethnic groups corresponded very closely to tabulations and estimates from several federal census sources.

Table 1-1 presents the distributions of the 242 Representative Schools by each of the three stratified dimensions, together with those of the nation's 62,534 elementary schools. It indicates that each stratum of the sampling matrix is well represented — although proportional sampling was not used.

Table 1-1

Population Percentages and Sample Sizes of U.S. Public Schools with Grades in the 1-6 Range by Sampling Strata

Sampling Strata and Dimensions	Percentage of the Nation's 62,534 Schools with Grades 1-6	Number of Schools in the Population	Number of Schools in the Representative Sample
Geographic Region			
New England	7.11	4,445	23
Metropolitan Northeast	8.32	5,202	23
Mid-Atlantic	10.57	6,610	26
Southeast	14.56	9,108	25
North Midwest	21.90	13,698	29
South Central	11.10	6,943	27
Central Midwest	7.13	4,457	27
North Central	5.21	3,255	21
Pacific Southwest	9.87	6,173	24
Pacific Northwest	4.23	2,643	17
District Size			
Small District	45.50	28,453	88
Medium District	30.41	19,018	80
Large District	24.09	15,063	74
District Poverty Level			
High Poverty	22.05	13,790	70
Medium Poverty	29.95	18,729	84
Low Poverty	48.00	30,015	88

Table 1-2 indicates that when weights are applied to sample data we can closely approximate census information. These tables and the results of findings reported previously lead to the conclusion that the Representative Sample is capable of supplying data and supporting analyses generalizable to the universe of interest.

Table 1-2

Population Percentages and Projected Estimates of Students Enrolled in U.S. Public Schools with Grades in the 1-6 Range by Racial/Ethnic Group

Racial/Ethnic Group	Projected Percentages from HEW/OCR 1972 Directory Universe* (grades K-12)	Projected Percentages from Representative Sample (grades 1-6)	Students in the Sample for Whom Race/Ethnicity and CE Status Data Were Available
American Indian, AK Native	0.52	0.66	712
Asian American	0.52	1.18	1,059
Black	15.22	14.36	13,244
Spanish Heritage	5.41	6.25	6,459
White, Non-Hispanic	78.33	77.55	57,143

*The HEW/OCR sample systematically excluded 8.3 percent of the public-school students: those enrolled in small school districts. The Representative Sample for this report is free of such a bias.

Brief descriptions of the components of the Representative Sample are provided below in order to provide a clearer picture of its scope and representativeness.

Districts. The districts range in size from 55 to 1,000,000+ students, and contain from one to 531 schools. Only five of the sampled districts do not participate in Title I.

Schools. A total of 242 schools are in the sample, ranging in size from an enrollment of 25 to 1,680, with a median enrollment of 385 students. The schools cover a full array of grade spans, having from only one grade to the complete span of K-12.

Teachers. Information used in this report comes from 3,578 teachers at the 242 schools. These teachers range widely in their experience and qualifications and in the subjects and types of students they teach.

Students. A reduced sample of 81,450 students, approximately evenly divided among the six elementary grades, is included in the sample. These students do not exhaust all the students in the 242 schools, as students outside the 1-6 range were not included. In addition, some students having an unacceptably small amount of data critical to this report were deleted.

Table I-3 presents information on the sample of students and how it was reduced. The first column of numbers constitutes what might be termed the complete Representative Sample. These numbers are misleadingly large, however. Because so many of the students originally listed provided no other data, we assumed that they were students who enrolled but failed to attend, or in some other manner are 'ghosts'. The second column of the table presents the percentage of the 'ghosts' at each stratum. All the percentages are below 3 percent and do not vary much among strata. There is a larger percent of 'ghosts' in the high-poverty stratum than in the low-poverty stratum, but that may merely reflect the higher mobility rates typically noted with high-poverty students. Subtracting these 'ghosts' from the complete Representative Sample, the remaining 81,450 students constitute the study sample for the present report. The last three columns of Table I-3 present the percentage of students kept in the Representative Sample who are missing complete instruments (in the case of CTBS, these students are missing both reading and math scores). Although the instruments have different rates of missing data, there are no notable strata differences (no one stratum is always highest or lowest) that would lead to concerns for the representativeness of the sample.

Information That Can and That Cannot be Projected to the Nation

Because the sample for the Sustaining Effects Study is a stratified-random, one-stage clustered sample, it is capable of providing unbiased and highly accurate projections for the nation's public-school students in grades 1 through 6, their schools, and their districts. There are limits, however, on what data can legitimately be projected from this sample. Only data that pertain to every case in the population can be projected, because the weights employed in the projections are based upon the ratios of the total number of cases of the population in each cell to the number of cases in the sample representing that cell. This is true whether the cases are districts, schools, or students; different weights, of course, being appropriate for each. The great advantage of weighting arises from the fact that we know the numbers of districts, schools, and students in each sampling cell (the numbers aren't actually 'known', but accurate estimations are available for the calculation of the weights).

Projecting School Data. Because schools were the primary independent sampling units, school-level projections will be discussed first. The cell-by-cell population to sample ratios (N_i/n_i) are what enable us to weight each school's data according to the number of schools it represents. These weights also enable us to calculate standard errors of the projected statistics so that the precision of the estimates can be gauged. The school characteristics reported upon here are based on responses to the first-year Principal Questionnaires, PQA and PQB, with a single exception: school CE fund receipt is based on information from the Compensatory Education Roster, CER.

Table 1-3

Student Sample Sizes, Loss Rates, and Selected Missing-Data Rates by Sampling Strata

Sampling Strata	Number of Students Listed on CER*	Percentage of Students Deleted Due to Having No Other Data	Number of Students Remaining in Report 5 Sample	Percentage of Students In Report 5 Sample Missing One Instrument CTBS	SAS**	SBC
Geographic Region						
New England	6,368	1.6	6,269	4.31	5.06	2.74
Metropolitan Northeast	10,637	2.8	10,343	5.50	8.80	3.35
Mid-Atlantic	9,861	1.0	9,762	3.52	7.91	1.81
Southeast	10,228	1.9	10,034	6.70	6.82	3.55
North Midwest	8,640	1.4	8,520	5.63	6.16	3.42
South Central	10,664	2.4	10,409	7.06	9.83	3.49
Central Midwest	7,263	1.5	7,154	6.39	6.45	3.72
North Central	5,979	2.0	5,862	8.12	8.10	3.77
Pacific Southeast	9,173	3.0	8,900	8.27	10.02	5.28
Pacific Northwest	4,322	2.9	4,197	8.53	9.13	4.05
District Size						
Small District	22,291	2.3	21,781	4.88	6.24	2.60
Medium District	27,395	1.6	26,946	6.59	6.86	3.74
Large District	33,449	2.2	32,723	6.90	9.92	3.85
District Poverty Level						
High Poverty	22,175	2.6	21,590	6.28	10.72	4.22
Medium Poverty	27,072	2.2	26,481	7.39	8.13	3.63
Low Poverty	33,888	1.5	33,379	5.34	5.95	2.88
Total	83,135	2.0	81,450	6.26	7.91	3.48

*See Table 2-1 for instrument abbreviations and descriptions.

**Since SAS was not administered to first graders, these missing rates were computed as based on students in grades 2-6 only.

Table 1-4 presents the percentages of schools that reported having students who receive CE from different CE funding sources. About two-thirds of the nation's public elementary schools receive Title I funds (these schools *may* receive Other CE funds) and an additional one-fifth receive Other non-Title I CE funds.

Table 1-4

Projected Numbers and Percentages of Schools Receiving CE Funds

CE Funds Received	Number of Schools	Percentage of Schools	Standard Error
Title I/Title I plus Other CE	42,275	67.6	3.9
Other CE funds only	12,910	20.6	3.1
No CE funds	7,349	11.8	2.8
Totals	62,534	100.0	

(It is worth noting that the projected percentage of schools receiving Title I funds is practically the same as the percentage obtained from the principal survey data (67.5%) based on 4,750 respondent schools (Hoepfner, et al.). On the other hand, the projected percentages of schools receiving Other CE funds only, and schools receiving no CE funds, are rather different from the 14.3% and 18.2% projected with the larger sample in a previous year. This finding suggests that percentages of Title I schools can be more reliably estimated because of the categorical and unambiguous nature of Title I allocations.)

Projections of characteristics at the school level, including placement, training, etc., are provided in Table 1-5. Some highlights of this table are:

- Students are placed in classrooms primarily on educational bases.
- A very large percentage (81.1%) of the nation's schools employ 'pull-out' procedures to some extent for CE instruction.
- The percentage of teachers, aides, and assistants receiving inservice training during the school year in basic skills is relatively low, especially for mathematics. Aides and teaching assistants are less likely to receive inservice training than are teachers.
- Advisory councils, advisory committees, Parent-Teacher Associations, faculty associations meet on fairly frequent bases.

Projections of grade-level characteristics are presented in Table 1-6. These indicate that about 5.6 hours of instruction per day is provided to each elementary grade, with slight

Table 1-5
Projected School Characteristics

School Characteristics	Mean	Standard Error
General		
Number of days in session during the school year	176.3	0.4
Number of meetings per semester of:		
Federal or state-mandated advisory	3.4	0.3
Non-mandated school advisory committee	2.1	0.3
Parent-teacher association	6.2	0.4
Voluntary committees	2.3	0.4
Faculty association/senate	7.3	0.5
Principal		
Principal's contract salary, 1976-77	$19,316.46	$227.82
Years of experience as a principal	8.6	0.4
Staff Training		
Percentage of teachers receiving:		
Reading inservice training	29.5%	2.6%
Math inservice training	16.1%	1.5%
Percentage of paid aides receiving:		
Reading inservice training	23.4%	2.9%
Math inservice training	11.4%	2.1%
Percentage of paid teaching assistants receiving:		
Reading inservice training	6.4%	1.6%
Math inservice training	1.8%	0.6%
Average hours of reading inservice training for:		
Teachers who receive it	10.1	0.9
Paid aides who receive it	4.4	0.6
Paid teaching assistants who receive it	3.0	1.3
Average hours of math inservice training for:		
Teachers who receive it	7.8	0.8
Paid aides who receive it	3.0	0.5
Paid teaching assistants who receive it	0.7	0.2
Students		
Percentage of schools that place students in classes		
On an educational basis	82.5%	3.1%
On an arbitrary basis	17.4%	3.1%
On the basis of student's or parent's request	0.2%	0.1%
Percentage of schools:		
With no CE students*	13.4%	2.9%
Providing CE services as part of an entire class	17.3%	3.3%
Employing "pull-out" for CE instruction	81.1%	3.3%
Where aides work with CE students in regular classrooms	35.0%	3.8%
Where teachers work with CE students in regular classrooms	20.0%	3.2%
Where teachers work with CE students and aides work with regular students	17.6%	2.8%

*This item is based on principal responses to the questionnaire, and should not be regarded as at variance with the value (11.8) in Table 1-4.

Table 1-6

Population Projections of School Characteristics by Grade

School and Grade Characteristics	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5		Grade 6		Total	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Hours of instruction per day	5.4	0.05	5.4	0.05	5.6	0.05	5.5	0.05	5.7	0.05	5.7	0.05	5.6	0.05
Percentage of students repeating grades	3.0	0.4	1.5	0.2	1.1	0.1	0.9	0.2	1.0	0.3	0.9	0.3	1.5	0.2
Percentage of schools with half-day sessions	3.6	1.2	3.6	1.2	3.9	1.2	3.5	1.1	3.9	1.3	4.7	1.2	3.6	1.1

increases in the time allotment as grade level increases. The percentage of students repeating grades is extremely small, being largest for the first grade, then decreasing to less than one percent by the sixth grade. The percentage of schools with half-day sessions is also very small, averaging about 3.6 percent across all grades.

Projecting Student Data. Sampling ratios are known for the students in the sample, so student-level data can also be projected to the population, and standard errors of the projections can be calculated. This is possible because, on the basis of census and principal survey data, we can accurately estimate the ratio of the number of population students in each grade in each cell to the number of students in the respective grade and cell in the sample. For student data, therefore, we use six different weighting matrices, one for each grade. It should be noted that students were not *directly* sampled, but were sampled as *clusters* within schools, and such clustering tends to limit the range of variance. We have thus incorporated formulas that adjust for the effect of clustering before the means and standard errors were estimated. Therefore, test scores, student background information, and instructional exposure data can be projected to the national population. Teachers' descriptions of services their students receive will not be projected because these data are too loosely associated with individual students, and the calculated standard errors would likely be underestimated due to the clustering of students within teacher responses.

To estimate the standard errors of the means projected for the student-level variables at each grade level it was necessary to obtain an approximate estimate of the within-cell variance of school means when there were fewer than two sample schools with data at a given grade in the cell. The approximation procedure used the two neighboring cells in the region with the same poverty level; if this failed the neighboring cells with the same district size were used; and if this failed the remainder of the neighboring cells in the region were used to complete the approximation. For conservatism, the highest of the available neighborhood cell estimates was used at each stage of the approximation. One of the outcomes of the above conservative approach to approximation can be seen in Table 1-7, where there is a noticeable

Table 1-7

Projected Percentages of Students Selected for Receipt of CE Services by Grade

	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5		Grade 6		Total	
CE Service	Percent	S.E.	Percent	S.E.	Percent	S.E.	Percent	S.E.	Percent	S.E.	Percent	S.E.	Percent	S.E.
Any CE service	23.44	3.26	29.89	3.28	27.46	2.98	27.19	3.22	24.59	3.14	20.57	4.24	25.44	2.75
Title I only														
Reading only	5.47	1.23	7.89	1.61	7.29	1.47	6.82	1.25	5.63	1.19	4.25	1.20	6.19	0.83
Math only	0.74	0.28	1.57	0.59	1.15	0.27	1.55	0.75	1.72	1.05	1.30	1.15	1.34	0.36
Reading & math	4.43	2.46	5.40	2.52	5.33	2.14	5.00	2.61	4.70	2.51	4.01	3.39	4.80	2.05
Total	10.64	2.68	14.86	2.86	13.76	2.32	13.37	2.88	12.05	2.74	9.56	3.60	12.32	2.20
Other CE only														
Reading only	2.42	0.56	4.50	0.87	3.02	0.48	2.72	0.47	2.75	0.70	2.22	0.86	2.92	0.43
Math only	0.59	0.90	1.00	1.57	1.00	1.23	1.93	2.06	1.49	2.06	0.67	0.21	1.11	1.35
Reading & math	7.15	1.89	6.71	1.98	6.23	1.87	6.25	1.78	6.00	1.96	6.67	3.20	6.49	1.65
Total	10.15	2.14	12.22	2.65	10.25	2.28	10.89	2.76	10.24	2.89	9.51	3.28	10.52	2.17
Title I & Other														
Reading only	0.28	0.15	0.70	0.40	0.59	0.33	0.40	0.22	0.25	0.16	0.09	0.09	0.38	0.14
Math only	0.02	0.01	0.03	0.02	0.04	0.03	0.00	0.00	0.09	0.07	0.00	0.00	0.03	0.02
Reading & math	2.35	1.27	2.08	0.75	2.82	0.68	2.53	0.91	1.96	0.60	1.42	0.85	2.18	0.53
Total	2.65	1.25	2.81	0.81	3.45	0.75	2.93	0.95	2.30	0.61	1.50	0.82	2.59	0.55
No CE at all	76.56	3.26	70.11	3.28	72.54	2.98	72.81	3.22	75.41	3.14	79.43	4.24	74.56	2.75

tendency for the standard errors of the 6th grade to be higher than those of the other grades. This is so because there were more cells for the 6th grade in which fewer than two schools had available data. (The same approximation method for determining the within-cell variance was applied during the calculation of the school and district standard errors.)

The national selection profile for various CE services is projected and presented in Table 1-7. It may be seen that about 25 percent of the nation's elementary-school students in grades 1-6 receive CE services in reading and/or math, peaking to approximately 30 percent at grade 2, and then declining to about 20 percent at grade 6. Title I, as sole source, funds 49 percent of the recipients, while 41 percent are funded solely by Other CE sources, with 10 percent being funded jointly. Of all students selected for CE services, 53 percent receive both reading and math services, 37 percent receive reading services only, and 10 percent receive math services only. Certain differences emerge due to fund source variation. For example, only 39 percent of Title I only students receive both reading and math services, while 62 percent of non-Title I students receive such services. On the other hand, 50 percent of Title I only students receive only reading CE services, whereas only 28 percent of non-Title I CE students fall into this category.

Table 1-8 presents national projections of various types and durations of instructional services received by students in each of the six elementary grades. Inspection of Table 1-8 indicates the following highlights among a large number that can be obtained from the table:

- On the average, students attend 34 weeks of school, with very little variation among schools and grades.

- Elementary students in grades 1-6 receive about 7 hours of reading instruction per week. This amount peaks at grade 1 to about 9 hours per week, then decreases steadily to 5.3 hours per week by the 6th grade. A substantial drop in time devoted to reading occurs between the 2nd and 3rd grades.

- The grade 1-6 students receive about 5 hours of math instruction per week, and this stays at approximately the same level throughout all grades.

- The largest percentage (30%) of student time spent in reading instruction is devoted to independent work with non-programmed materials.

- The second largest percentage (21%) of student across-grade reading instruction time is devoted to working in small groups of 7 to 13 students with a regular teacher. Extremely small average time allocations occur for tutoring, and for working with special teachers.

- The largest percentage (37%) of student time spent in math instruction occurs in large groups of 21 or more students with a regular teacher.

Table 1-8

· Projected Instructional Services Received by Students

Instructional Service	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5		Grade 6		Total	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.
Weeks attended per year	33.5	0.2	33.8	0.2	33.9	0.2	33.9	0.2	34.0	0.2	33.8	0.3	33.8	0.
Average hours of reading attended per week	9.1	0.3	8.5	0.3	6.9	0.2	5.9	0.2	5.6	0.1	5.3	0.2	6.9	0.
Total hours of reading offered per year	321.7	9.8	303.7	10.7	245.8	6.5	210.4	8.5	200.7	5.3	189.3	6.8	244.6	4.
Total hours of reading attended per year	302.2	9.3	288.0	10.5	232.5	6.4	199.4	8.2	190.3	5.3	178.6	6.6	231.1	4.
Hours of reading attended per year:														
Group of 21+ students with teacher	44.9	6.3	35.2	5.1	41.3	5.3	38.0	7.0	44.7	6.0	40.1	5.6	40.8	3.
Group of 14-20 students with teacher	12.0	2.7	14.4	3.3	14.6	3.1	18.7	3.1	15.5	2.8	17.4	4.1	15.4	1.
Group of 7-13 students with teacher	81.8	6.3	71.0	6.2	46.1	4.4	40.5	5.3	30.5	3.7	26.4	4.8	49.1	2.
Group of 1-6 students with teacher	38.0	2.7	38.2	5.1	25.8	4.1	19.9	2.4	18.4	3.3	18.6	3.1	26.4	1.
Group of 7+ students with special teacher	3.1	0.9	4.4	1.2	4.5	0.7	4.0	1.6	3.8	1.6	5.0	1.3	4.1	0.
Group of 1-6 students with special teacher	5.9	1.1	8.2	1.1	7.2	0.8	6.6	1.5	5.2	1.2	3.5	0.9	6.1	0.
Group of 1-10 students with aide	12.4	1.8	8.8	1.6	9.4	1.3	5.3	1.7	4.1	1.1	3.2	1.2	7.2	0.
Individually with totor	3.6	0.9	2.4	0.8	2.0	0.5	1.0	0.3	1.2	0.6	0.9	0.3	1.8	0.
Independent work with programmed material	7.8	1.4	15.2	3.1	7.8	1.9	9.0	1.3	11.2	2.0	11.0	2.7	10.3	1.
Independent work, non-programmed material	92.2	4.4	90.0	5.9	73.4	4.2	56.0	5.1	55.6	3.4	52.2	5.0	69.6	2.
Average hours of math attended per week	5.0	0.2	5.0	0.1	4.9	0.1	5.0	0.1	4.9	0.1	4.8	0.1	4.9	0.
Total hours of math offered per year	177.3	5.7	178.9	4.6	174.7	2.8	176.5	3.5	176.3	3.2	172.2	4.4	175.9	1.
Total hours of math attended per year	166.3	5.2	169.4	4.5	165.4	2.9	167.5	3.4	167.2	3.2	162.5	4.1	166.3	1.
Hours of math attended per year:														
Group of 21+ students with teacher	59.8	4.9	57.7	5.0	64.8	5.1	64.5	5.9	62.5	4.9	64.3	7.2	62.3	3.1
Group of 14-20 students with teacher	15.0	4.4	15.1	4.3	11.0	2.0	15.0	3.2	11.9	2.8	15.9	4.0	14.0	1.
Group of 7-13 students with teacher	13.1	2.6	12.3	3.1	12.5	3.1	12.3	2.4	16.6	2.8	15.1	3.6	13.7	1.
Group of 1-6 students with teacher	9.9	1.4	13.2	2.1	9.7	1.5	13.6	2.2	14.9	2.6	12.3	2.4	12.3	1.0
Group of 7+ students with special teacher	0.7	0.2	1.3	0.4	1.8	0.5	2.8	2.0	3.7	2.3	2.7	1.1	2.2	0.6
Group of 1-6 students with special teacher	0.7	0.2	1.8	0.6	2.3	0.5	2.7	0.6	2.9	0.8	1.2	0.5	1.9	0.3
Group of 1-10 students with aide	5.0	0.9	4.9	1.0	4.9	1.0	3.0	0.8	2.7	1.0	2.0	0.7	3.7	0.6
Individually with tutor	1.1	0.3	1.2	0.3	0.9	0.2	0.8	0.3	0.9	0.3	1.0	0.3	1.0	0.2
Independent work with programmed material	1.6	0.9	4.3	2.1	3.8	1.4	5.0	1.1	5.9	1.8	4.8	1.8	4.2	0.9
Independent work, non-programmed material	59.4	3.5	57.3	3.0	53.8	3.1	47.5	3.3	45.1	3.2	43.0	4.2	50.9	1.8

- The second largest percentage (31%) of student time spent in math instruction is devoted to independent work with non-programmed materials. Here, as in reading, extremely small average time allocations occur for tutoring and for working with special teachers.

In general, a student's reading and math instruction at present is primarily composed of independent seat work and large-class instruction, with small-group instruction for reading being common at the earlier grades.

Background characteristics of students are projected to the national level and reported in Table 1-9. About 85 percent of elementary students in grades 1-6 have had kindergarten experience. The 1st, 2nd, and 3rd grades have a higher incidence of kindergarten experience than the overall average for the six grades, probably indicating an increasing trend in kindergarten attendance in recent years. About 25 percent of the students have had Head Start, nursery school, or pre-school experience, but no trend is apparent over grades. About one-third of the students receive free or reduced-price lunches. The percentage of students attending summer school prior to grade 1 is quite small, ranging from 2 percent for the 1st grade to 7 percent for the 5th grade.

Approximately 31 percent of all students are rated by their teachers as in need of reading CE services and 24 percent are judged to be in need of math CE services. The percentage for reading (31%) is very close to the 33rd percentile cutoff for defining the term 'low achiever' used in later chapters of this report. A small percentage (3 to 5%) of students receive some type of compensatory services in guidance, counseling, health, or nutrition. The minority concentration in grades 1-6 is approximately 22 percent: 14 percent Black, 6 percent Hispanic, 2 percent representing American-Indians, Alaskan Natives, and Asian-American, inclusively.

Projecting District Data. Although districts were not the sampling unit, they were in effect sampled by an indirect randomization process. Each school randomly selected brought its district into the sample. Therefore, the assumption was made that the 219 districts in the Representative Sample were just as randomly selected within cells as were the 242 schools with which they are associated. Census counts of qualifying districts (those with at least one grade in the 1-6 range) were obtained for each sampling cell so that appropriate weights could be calculated for district-level projections to the nation.

Table 1-10 presents national projections of district participation in, and implementation of, Title I. From Table 1-10 it may be seen that almost all districts (93.7%) participate. An extremely small percentage of districts do not qualify for Title I or do not apply for it if they do qualify. Most districts use multiple criteria to determine school eligibility for Title I. The most frequent criterion applied is free or reduced-price lunch counts, followed by AFDC enrollment in the district.

Practices and expenditures for regular educational programs of districts are projected to the nation in Table 1-11, with the following highlights:

- About 82 percent of the districts provide individual student scores, by subject, when reporting the results of district-wide testing. Sub-group scores, such as those separated for Title I students, are rarely reported.

Table 1-9

Population Projections of Student Characteristics by Grade

Student Characteristic	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5		Grade 6		Total	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.
Percentage of students who attended:														
Kindergarten/pre-kindergarten	90.4	1.4	89.5	1.6	86.0	1.4	83.9	1.7	82.8	1.7	79.2	3.6	85.2	1.
Head Start, nursery- or preschool	24.7	2.1	24.4	2.0	26.7	2.4	25.3	2.1	26.6	2.5	23.3	2.7	25.2	1.
Summer school prior to grade one	2.3	0.6	4.3	1.0	5.8	1.1	6.1	0.9	7.5	2.0	6.1	1.0	5.4	0.
Percentage of students receiving:														
Free or reduced-price lunch/breakfast	33.4	2.3	33.3	2.2	34.1	2.1	33.9	2.3	32.8	2.2	29.8	2.7	32.8	2.
Compensatory guidance or counseling	2.6	1.4	3.0	1.1	3.3	0.8	3.2	1.4	2.2	0.6	4.5	0.5	3.1	0.
Compensatory health or nutrition	5.8	1.3	6.9	2.0	5.1	1.5	4.3	1.1	4.0	1.3	4.3	1.7	5.0	1.
Percentage rated by teacher as needing:														
Compensatory reading services	29.5	2.1	34.3	1.8	32.5	1.6	32.0	1.8	30.4	2.1	27.0	2.2	30.9	1.
Compensatory math services	21.7	2.1	24.5	1.8	24.5	1.8	25.1	1.8	26.0	1.9	23.6	2.5	24.2	1.
Percentage of minority-group students	24.0	2.5	22.7	2.5	23.2	2.4	22.0	2.8	22.3	2.8	20.7	2.9	22.5	2.
American Indian or Alaskan native	0.7	0.4	0.6	0.3	0.6	0.3	0.8	0.4	0.6	0.4	0.7	0.4	0.7	0.
Asian-American	1.3	0.5	1.2	0.5	1.2	0.5	1.0	0.5	1.3	0.7	1.2	0.5	1.2	0.
Black	15.8	2.5	14.8	2.6	15.1	2.5	13.9	2.9	14.4	2.9	12.4	3.0	14.4	2.
Spanish heritage	6.2	0.9	6.1	1.1	6.4	1.1	6.3	1.0	6.0	1.2	6.4	1.1	6.3	1.
Percentage of White, non-Hispanic students	76.1	2.5	77.3	2.5	76.8	2.4	78.0	2.8	77.7	2.8	79.3	2.9	77.6	2.

Table 1-10

Projected Percentages of Districts' Title I Participation

Title I Participation	Percentage of Districts	Standard Error
District participates in Title I	93.69	2.71
District does not qualify for Title I	2.92	2.06
District did not apply for Title because:		
Proposal-preparation staff not available	0.89	0.89
It chose not to do so	2.50	1.53
District applied, but proposal not approved	0.00	0.00
District determines school eligibility on the basis of:		
District does not participate in Title I	6.31	2.71
Census data on family income	44.90	6.64
AFDC enrollment	58.90	6.34
Free or reduced-price breakfast counts	13.65	3.26
Free or reduced-price lunch counts	77.99	5.15
Number of neglected or delinquent children	30.47	5.91

- The district selects reading, math, or both basic textbooks in 55 percent of the districts. However, there is a substantial number of districts in which the schools select these texts from district approved lists.

- High-level administrators in the district have the most influence in the hiring of teachers.

- The average district's current per-pupil expenditure for education is approximately $1,333.57. This figure corresponds closely to an average of $1,326.17 derived from data reported in an NIE Study 'Title I Funds Allocation: The Current Formula' (NIE, 1977, p. 95). This projection should not be interpreted as the average per-pupil current expenditure for all pupils, because it is computed at the district level rather than at the pupil level. Thus, small, rural, and poor districts are grossly over-represented in terms of their numbers of students.

Data That Were Not Projected. There are two instances in which it is ill-advised to make population projections, largely because of the impossibility of knowing or accurately estimating the ratios that relate the sample to the population. The first instance is a result of the unit of analysis. As mentioned earlier, we can make accurate population projections and can calculate the associated standard errors for data collected at the school, student, and district levels. Data describing teachers and their activities, on the other hand, should not be projected because we don't know and cannot accurately estimate the sampling ratios

Table 1-11

Projected Educational Practices and Expenditures by Districts

District Characteristic	Projection	Standard Error
Results of district achievement testing programs in reading and mathematics		
Percentage of districts with no testing program or no school-reporting method	1.52	1.14
Percentage of districts reporting district-level statistics by grade and subject	63.13	5.75
Percentage of districts reporting school-level statistics by grade and subject	68.01	4.02
Percentage of districts reporting class-level statistics by subject	60.66	5.79
Percentage of districts reporting student scores by subject	81.52	4.84
Percentage of districts reporting sub-group scores by subject	29.59	5.74
Textbook selection procedures for reading or math*		
Percentage of districts for which state selects texts used in all schools	0.31	0.17
Percentage of districts for which district selects texts used in all schools	55.36	6.09
Percentage of districts in which schools may choose from restricted approved lists	18.09	5.03
Percentage of districts in which schools may choose from non-restricted approved lists	10.26	2.51
Percentage of districts in which schools may select their own texts	17.78	4.40
Average per-pupil current expenditure for education (district average)	$1,333.57	$33.66
Most influential agent in decisions about teacher hiring		
Percentage of districts where school board members are	8.55	3.96
Percentage of districts where high-level administrators are	56.78	6.23
Percentage of districts where other district personnel staff are	2.85	0.92
Percentage of districts where school principals are	31.82	5.01

*These percentages do not have to add to 1.0.

for them. (There is no practical way to know how many teachers are in each sampling cell of the population, and although it would have been possible to hazard population estimates for teacher-level data, it would then be impossible to calculate trustworthy standard errors.) The second instance in which population projections will not be made is where students, schools, or districts have been categorized into sub-groups as samples of sub-populations. The calculated sampling ratios are appropriate only for projecting the entire sample to the entire population, not for projecting non-random subsets of the sample to sub-populations. If, for example, we were most interested in projecting the characteristics of students who participate in Title I programs, we would need to know (or to estimate accurately) the population number of Title I student participants in each of the 84 cells in order to calculate the correct weights. Use of the weights based on all students in the nation would be appropriate only if Title I participation were proportionally distributed over all the sample cells, but the stratification dimensions militate against that. Therefore, national projections were calculated only for characteristics of the entire sample of students, schools, and districts. (Intuitively, the unweighted statistics of subsets of the sample might be sufficiently accurate because of the extent and effects of stratification.)

The Projected Data. Sampling considerations led to the decision to present and discuss all national projections in this chapter. By collecting all the projected data into one place we have summarized all our population characteristics for the reader interested in them. All of the analyses presented in Chapters 3 through 11 will be based on *unweighted* data.

REFERENCES FOR CHAPTER I

Hoepfner, R., Zagorski, H., and Wellisch, J. The Sample for the Sustaining Effects Study and Projections of Its Characteristics to the National Population. Santa Monica: System Development Corporation, 1977.

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CHAPTER 2. THE NATURE OF THE INSTRUMENTS AND MEASURES

Although the instruments employed in this study and the measures derived from them will be described in detail in a later technical report, summary information is provided here so that the reader may have a better understanding of certain essential procedures.

The Data-Collection Instruments

Eighteen instruments were employed during the first year of the study to collect almost all of the data that were analyzed in any way. Each instrument had a specific purpose in terms of the overall study design and each item of each instrument was carefully justified in terms of its contribution to answering some question of a policy or research nature. Within economic limits, the administration procedure was selected to provide the most valid information. Summary characteristics are reported for each instrument in Table 2-1.

In almost any large-scale study using data-collection instruments, one can expect that a certain and variable percentage of the respondents expected to respond would fail to do so. At the student level, non-response is generally caused by absences, rarely by personal choice not to respond. Because absence rates are related to student characteristics closely associated with educational and economic disadvantage, make-up tests were administered at all schools in an effort to reduce the non-response rate of the student instruments as much as possible. Close monitoring of returned questionnaires resulted in the equivalent of make-up testing at the principal, school, and district levels. Among the teachers, however, there was no efficient method of ensuring high rates of response, except for the promise of receipt of a modest stipend.

Each instrument has a different response rate, as reported in Table 2-1. The response rates are generally high (none lower than 89 percent) and comparable to those found in other studies of this kind. There has been no attempt to investigate if biasing effects on the sample of data collected have been introduced by the non-responses. Nonetheless, readers may find comfort in learning that non-respondent analyses conducted by other survey studies like this one often failed to detect systematic biases due to such low-order non-response rates (Breglio et al., 1978).

The Measures of Achievement, Poverty, and Selection for Compensatory Services

The Nature of the Achievement Scores Used. The vast majority of students participating in this study was administered two adjacent levels of the Comprehensive Tests of Basic Skills (CTBS) for the fall pretest of the first year of the study (see Hoepfner and Christen, 1976, for the rationale and procedures of the achievement testing). Therefore, not only were there scores for each of the levels, but there were also sub-scale, scale, and total scores. With the exception of the math scales, each of these scores could be debiased or not (see Hoepfner and Christen, 1976), and all of the scores could be expressed as raw scores, percentiles, vertical-scale scores, or grade-equivalent scores (yielding up to 88 different achievement

Table 2-1

The Names, Administration Procedures, and Response Rates for Eighteen Instruments Used in This Report*

Compensatory Education Roster (CER)

Indicates the compensatory services for which each student is selected. Completed by school coordinators for 100 percent (83,135) of the students.

Comprehensive Tests of Basic Skills – Mathematics (CTBS-M)

Indicates student achievement status on mathematics concepts and computations. Administered by classroom teachers and completed by 91.7 percent (76,235) of the students.

Comprehensive Tests of Basic Skills – Reading (CTBS-R)

Indicates student achievement status on reading vocabulary and comprehension. Administered by classroom teachers and completed by 91.5 percent (76,097) of the students.

District Characteristics Questionnaire, Section A (DCHA)

Describes the size, organization, and operations of each school district. Completed by 100 percent (219) of the superintendents or their designees.

District Characteristics Questionnaire, Section B (DCHB)

Describes the nature, organization, and delivery of Title I programs of each district. Completed by 100 percent (219) of the superintendents or their designees.

District Expenditure Information Questionnaire (DEX)

Records regular and compensatory expenditures by category of each district and school. Completed by 100 percent (219) of the district business managers, superintendents, or their designees.

Household Information Questionnaire (HIQ)

Describes the economic status and home environment of each student. Administered by interviewers to the parents of 89.5 percent (14,159) of the 15,816 households representing students included in DECIMA's Participation Study.

Practical Achievement Scale (PAS)

Assesses student achievement status on real-life reading/computing problem situations. Administered by classroom teachers to 92.9 percent (38,310) of the 41,255 students in grades four through six.

Table 2-1 (continued)

The Names, Administration Procedures, and Response Rates for Eighteen Instruments Used in This Report*

Principal Questionnaire, Section A (PQA)

> Records characteristics of each principal and his/her school. Completed by 100 percent (242) of the principals or their designees.

Principal Questionnaire, Section B (PQB)

> Records characteristics of the school's students, staff, and programs. Completed by 100 percent (242) of the principals or their designees.

Student Affective Measures (SAM)

> Assesses student attitudes toward reading, math, and school. Administered by classroom teachers to 91.7 percent (62,309) of the 67,931 students in grades two through six.

Student Background Checklist (SBC)

> Records demographic, educational, and parental background for each student. Completed by classroom teachers for 96.6 percent (80,326) of the students.

Student Participation and Attendance Record (SPAR)

> Records the student's exposure to math and reading instruction by time, instructor, and group size. Completed by math and reading teachers for 95.6 percent (79,442) of the students.

Student-Teacher Linkage Roster (STLR)

> Provides a linkage of each student with up to three math and three reading teachers who provide instruction. Completed and maintained by school coordinators for 90.2 percent (74,989) of the students.

Summer Activity Slipsheet (SAS)

> Records of the activities engaged in by each student during the previous summer. Completed by teachers at grade two and by students in grade three through six for 90.5 percent (61,501) of the students in grades 2-6.

Teacher Questionnaire A (TQA)

> Records characteristics, teaching methods, and attitudes of each teacher. Completed by all teachers for 95.4 percent (3,413) of the 3,578 teachers.

Teacher Questionnaire B (TQB)

> Records characteristics of each reading teacher's reading program. Completed by all reading teachers for 91.1 percent (3,088) of the 3,389 reading teachers.

Table 2-1 (continued)

The Names, Administration Procedures, and Response Rates for Eighteen Instruments Used in This Report*

Teacher Questionnaire C (TQC) Records characteristics of each math teacher's math program. Completed by all math teachers for 89.3 percent (2,801) of the 3,137 math teachers.
*From the student status file maintained by the SES data collection group, it was determined that a total of 83,135 students were enrolled in the 242 representative schools at the outset of this study (1976-77 school year). This total was used in the calculation of response rates presented in this table. Thus, losses due to withdrawal, transfer, and absences were all counted as non-responses.

indices for most students). Decisions were made early in the study, therefore, as to what kind of score would be most meaningful and appropriate for each kind of analysis. Throughout this report (with one exception in Chapter 3) we have employed the CTBS reading and math scores which have not been statistically debiased. We elected to use these scores because of the policy implications in this report which might result in recommendations on how tests should be employed. The non-debiased scores are the kind that are generally available and therefore usable in the schools. Moreover, the debiasing study conducted for this project has found very few (at most three for a reading test and none for math) biased items that were removed from the publisher's tests to form the debiased scale. Thus, the raw score of each debiased reading scale correlates very highly (greater than 0.99) with its corresponding non-debiased publisher's scale. In the cases where basic skill total score is used, the debiased scale is adopted. The publisher does not have corresponding scales for the basic skill total scores we employed. We also limited this report to the use of percentile scores; the percentile conversions having been developed especially for this study (the CTBS scaling methods and new conversions will be documented in a later report – Report 9 of this series). We also decided not to use sub-scale scores, but instead to use only reading total, math total, and a self-weighted combination which we labeled 'basic skills total.' When analyses are done separately for reading and for math, the total scores for each skill are analyzed, but when a generalized index of achievement makes more sense, the basic skills total score is employed. Percentile scores are used through much of this report because they are the most meaningful and are generally appropriate for the analysis techniques used. The achievement scores are nonetheless labeled in each table so that the reader will know at all times what kind of data are being analyzed and interpreted.

The Definition of Achievement Level. The Sustaining Effects Study has made an effort to maintain separate records of a student's being selected to receive compensatory services and the educational services the student actually received. In this way, we can describe and compare the nature and amount of educational services provided to the compensatory selectees and nonselectees. Different instruments were employed to obtain information on each of these aspects: CER indicates students' selection for compensatory services, while SPAR, TQA, TQB, and TQC record and describe the educational services delivered.

The CER and SPAR data were obtained for each individual student so that the separation between selection for compensatory services and amount of services received can be reasonably kept. Burdening the teachers with separate responses for each student on more instruments would be an impractical and unacceptable procedure for obtaining information. To overcome the difficulty of separately describing the services delivered to each student, we may ask the teachers to respond to two different cases only: one for compensatory education selectees and one for nonselectees. Such a strategy, however, would undermine our aim of distinguishing selection data from service data.

A compromise between the two options of collecting service data from the students' teachers was suggested by the staff of U.S.O.E. and O.M.B. Some two-pronged items were used in the teacher instruments so that the teacher could respond differently for low-achieving students than for regular-achieving students. In order to aid the teachers in making the distinction between the two groups of students in a uniform manner, the definition of low-achieving students printed on the instruments indicated that such students are those who score a year or more below grade level. Then, the two different service responses by the teachers were linked to their students' service data on the basis of the students' grade-equivalent scores earned on the CTBS.

Several of the policy questions to be discussed later in this report must also consider students as low- and regular-achievers, so the question arose whether the one-year-below-expectation definition was a good one for categorizing students. Reference to current legislation and regulations for student selection for Title I offered no help, as the definitions were impossible to operationalize in a unique manner. We were strongly urged not to use the grade-equivalent approach to categorize students for the following reasons: (1) many educators, policy makers, and researchers distrust the grade-equivalent score, probably due more to the fact that it is frequently misused than to any inherent weakness of the scale; and (2) the grade-equivalent definition of low achievement results in about 7 percent of the 1st-grade students being so classified, increasing to about 38 percent for the 6th-grade students. Thus accepting such a definition for funding purposes could well result in condemning compensatory programs to being remedial and never preventive.

In an effort to avoid the problems encountered in the use of the grade-equivalent for categorizing achievement, normed percentile scores were considered. The problem in setting a certain percentile as the cutoff for low- and regular-achievement categories is the obvious arbitrariness of doing it. If the percentile cutoff score is set too low, there will be few low-achievers. One might then argue that CE programs are over-funded and should be cut back so that only the low-achievers are served. On the other hand, if the percentile cutoff score is set too high, there will be very many low-achievers. Consequently, it would appear that CE programs are under-funded and only a small portion of those students considered in need are served. Several conventional cutoff points, such as 15, 25, 30, 33, 40, and 50 percent were considered, but it became clear that without anchoring the percentile cutoff in educational theory or actual practice, we could be accused of slanting the results of the analyses in either or both directions.

In one of the early evaluations of compensatory education, the U.S. Office of Education (1970) reports that "educational disadvantage" was gauged by teachers' judgments of whether the student lacked the ability to complete high school, as applied to students in grades 2, 4, and 6. Although such long-term judgments can be expected to be highly inaccurate, 19.2 percent of the students in the 1968 survey were so judged. The 1973 guidelines for Title I administration in the State of California (California State Department of Education, 1972) suggest the bottom quarter (25th percentile and below) of the score distribution as children having 'priority' eligibility for services. The percentiles associated with the average reading raw scores for 2nd- and 4th-grade students receiving compensatory reading services were about 26 and 21, respectively, as measured with the Metropolitan Achievement Test (Trismen and Waller, 1976, pp. 15-16). It follows that many of the recipients (probably close to half of them) earned reading scores higher than the 26th or 21st percentile. The National Institute of Education (1977) defined low-achieving students as scoring at or below the 15th percentile, with the reason being that this cutoff defined as many children to be low-achieving nationwide as the current poverty standard identified as being poor. Because the NIE was studying the effects of the cutoffs on the allocation of Title I funds, it performed analyses with the low-achieving percentile ranging from the 7th to the 30th. The 1967-68 national survey of Title I found that 33 percent of all students in the surveyed (Title I) schools were reported to be educationally disadvantaged (Rossi, McLaughlin, Campbell, and Everett, 1977, p. 43). In preparation for the new authorization for Title I, the Education Committee of the U.S. House of Representatives frequently requested data in terms of the 33rd percentile cutoff for the definition of low achievement. (See Hearings before the subcommittee on elementary, secondary, and vocational education of the Committee on Education and Labor, House of Representatives, Part 16.) An informal communication with personnel at the U.S.O.E. Division of Education for the Disadvantaged indicated that when districts and states do report low-achievement cutoff scores, they range from the 10th to the 50th percentile, and center at about the 33rd percentile. Based upon this information, we arbitrarily define low-achievement for this report as a score at or below the 33rd percentile. Whether a student is low achieving or not was always determined on the basis of the non-debiased CTBS score, with the test level being that recommended by the publisher for the student's grade. This practice was adopted so that our findings would be more in line with actions that districts or states might be taking. For various analytic needs, the low-achievement indicator was obtained for reading, for mathematics, and for combined basic skills. Using this definition, we can expect about one-third of the nation's students to be categorized as low-achievers who very likely need "...special educational assistance to perform at the grade level for his (sic) age" (U.S.O.E., 1972). With the 33rd percentile definition of low-achievement, the test data for reading and math in the Representative Sample were used to obtain projected estimates of the percentage of 'low-achievers' in each of the nation's ten geographic regions (as defined in the SES sampling scheme). The projected percentages are provided in Figure 2-1. The clearest conclusion from an inspection of the figure is that the low-achieving rates for both reading and math are greatest in the sunbelt of the country and lowest in the north and central regions. The ten regions, further, are very similar in their standings on reading and math achievement, with a Spearman *rho* of 0.976 between their ranks in the two skill areas.

The Estimation of Poverty. Because the allocation of Title I Compensatory funds is made on the basis of poverty at the state, district, and school level, it was necessary to incorporate indices of poverty into many of the analyses for this report. We were very distrustful of the traditional sociological indices of socio-economic status which depend upon the student's response to questions regarding the work done by the parents. In our sample, where many of the children are educationally disadvantaged, we anticipated that such responses would

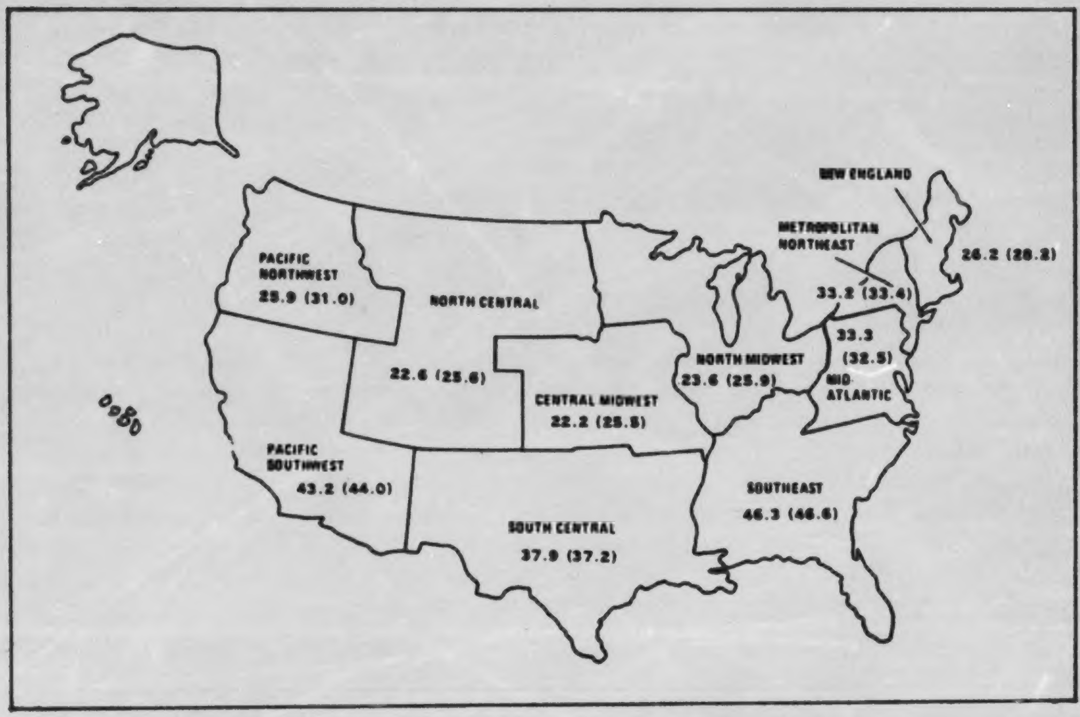

NEW ENGLAND
26.2 (28.2)
METROPOLITAN NORTHEAST
33.2 (33.4)
PACIFIC NORTHWEST
25.9 (31.0)
NORTH CENTRAL
22.6 (25.6)
CENTRAL MIDWEST
22.2 (25.5)
NORTH MIDWEST
23.6 (25.9)
33.3 (32.5)
MID ATLANTIC
PACIFIC SOUTHWEST
43.2 (44.0)
SOUTH CENTRAL
37.9 (37.2)
SOUTHEAST
46.3 (46.6)

Figure 2-1

Projected Percentages of Grade 1-6 'Low Achievers' in Reading (Math) by Region, Based on the 33rd Percentile Definition of Low Achievement

be too vague and inaccurate. Instead, teachers were asked several questions about their students' backgrounds which we thought they might be able to answer with some validity. Our intention was to estimate an index of poverty by appropriately combining several of the teachers' responses. We were able to determine the weights for the combinations because we had rather accurate (criterion) income data on more than 14,000 families. These data were obtained in the home interviews using the Household Information Questionnaire (see Table 2-1 and Breglio, Hinckley, and Beal, 1978). The reported family income expressed as a percentage of the Orshansky poverty level was regressed on the responses to the Student Background Checklist for student's receipt of free or reduced-price lunches, parents' educational levels, race/ethnicity, previous participation in Head Start, incidence of physical or emotional adjustment problems, and incidence of non-English language spoken in the home. Only the first two variables entered the regression equation consistently, so these two were weighted to form the poverty index for each student in the study. Among the students for whom we had economic information by means of an interview, the correlation between the interview-derived poverty index and the weighted approximator from the Student Background Checklist data was 0.57. When the poverty criterion was dichotomized into poor and non-poor, the weighted composite correctly classified 46 percent of the poor and 93 percent of the non-poor. Although the analyses indicate that our poverty index is not highly accurate, it probably compares favorably with those employed in previous studies. Since the index is frequently aggregated to the school level to obtain a school poverty index, its inaccuracy is not expected to substantially bias the analyses in which it is used.

Selection for Compensatory Services. The primary source of information on a student's status regarding his or her selection for some kind or kinds of CE services was the Compensatory Education Roster (see Table 2-1). Because selection status plays so critical a part in the study, the information was quality-controlled through partially redundant questions asked of principals and district business managers. As one might expect, our selection indicators for Title I services were remarkably accurate (less than 0.2 percent of the indicators exhibited inconsistencies). Clearly, when the funding regulations require that selectees actually be categorically named, there is agreement among different information sources within the district. A much larger percentage of discrepant selection data was obtained for other federal, state, and district compensatory programs (ranging up to 3.4 percent of the responses for district reading services). These discrepancies result from a combination of ambiguities as to whether funds are compensatory in nature and to the fact that the funds are not precisely categorical, so that they may be disbursed for compensatory services without being designated as such in any budgets. The inconsistencies were resolved through one or more complex methods, frequently involving telephone calls to the school or district that were designed to provide us with additional information relevant to making corrections in the selection indicators.

Because we will be studying the effects of reading, math, and total educational services, the selection indicators were created separately for reading, math, and both combined. However, compensatory services are provided not only by Title I, but also by other federal, state, district, and private programs. In addition, many students are selected to receive services from more than one of the programs. One may quickly surmise that the number of combinations of different types and sources of compensatory services is very large. It was therefore necessary to reduce the number of combinations to a smaller number of conceptually well-defined categories, populated by reasonably large numbers of students.

The categories of student selection were created by considering categories of schools and of students simultaneously. Schools were categorized into those that receive Title I funds (and any other compensatory funds), those that receive only other kinds of compensatory funds, and those that receive no compensatory funds. Within schools, students were categorized as being selected for Title I services (and any other compensatory services), only for other compensatory services, and for no compensatory services. Of the nine possible combinations of school and student categories, six are meaningful, exhaustive, and represented by large numbers of students. These six categories are listed below, and the numbers of students (of the 83,135 who were listed on the Compensatory Education Roster) in each category are presented by grade in Table 2-2.

- Student is selected for Title I services, and perhaps also Other CE, at a school receiving only Title I or both Title I and Other CE funds.

Table 2-2

Numbers of Students by CE Selection Category and by Grade for Reading and Math Compensatory Services

Selection Category	Gr. 1	Gr. 2	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Total
Reading							
Student selected for Title I (and other) services in Title I school	1,782	1,888	1,969	1,616	1,524	1,207	9,986
Student selected for Other CE services only at Title I school	890	912	780	741	688	779	4,790
Student selected for Other CE services at an Other-CE school	592	633	594	546	560	569	3,494
Student not selected for CE services at a Title I school	7,475	6,124	5,922	6,048	6,190	6,449	38,208
Student not selected for CE services at an Other-CE school	3,059	2,651	2,702	2,677	2,781	4,528	18,398
Student not selected for CE services at a non-CE school	1,406	1,217	1,284	1,270	1,339	1,743	8,259
Totals	15,204	13,425	13,251	12,898	13,082	15,275	83,135
Mathematics							
Student selected for Title I (and other) services in Title I school	947	918	1,046	942	879	687	5,419
Student selected for Other CE services only at Title I school	811	688	588	676	583	685	4,031
Student selected for Other CE services at an Other-CE school	390	327	416	378	421	445	2,377
Student not selected for CE services at a Title I school	8,389	7,318	7,037	6,787	6,940	7,063	43,534
Student not selected for CE services at an Other-CE school	3,261	2,957	2,880	2,845	2,920	4,652	19,515
Student not selected for CE services at a non-CE school	1,406	1,217	1,284	1,270	1,339	1,743	8,259
Totals	15,204	13,425	13,251	12,898	13,082	15,275	83,135

- Student is selected *only* for Other CE services at a school receiving both Title I and Other CE funds.
- Student is selected for other compensatory services at a school receiving *only* CE funds other than Title I.
- Student is not selected for any compensatory services at a school receiving *only* Title I or both Title I and Other CE funds.
- Student is not selected for any compensatory services at a school receiving *only* CE funds other than Title I.
- Student is not selected for any compensatory services at a school receiving no CE funds.

PART II. SERVICES PROVIDED BY REGULAR AND CE PROGRAMS

CHAPTER 3. THE SELECTION OF STUDENTS FOR COMPENSATORY SERVICES

Before we look closely at the myriad of varieties of services provided by regular and CE programs, we have elected to discuss the selection of students for compensatory services. In this chapter we attempt to answer questions about what kinds of students are selected to receive compensatory services, how they are selected for receipt, and for what period they receive those services. Knowing the 'who' and 'how' of CE services, we will better understand the 'what' which forms the subject of Chapter 4.

Throughout this chapter we use the words 'selectee,' 'recipient,' 'receives,' and 'receipt' in a very special and limited way. The term 'selectee' is used to refer to students whose records from the Compensatory Education Roster (CER) show that they were selected to receive compensatory services. Occasionally, 'recipient' is used to indicate a student who is reported as receiving CE services by the teacher. As any educator will acknowledge, one does not know what a student 'receives' unless one observes the student throughout the school day. As that ideal cannot be reached in a study of this size, we have relied instead on less direct indicators of receipt. When the word 'receives' is employed in this report, it really means 'is reported as receiving or as being selected to receive.' In other words, when we report that a student 'receives' some kind of regular or CE services, we do not base that on our observation or even on other indications of what services are received. Rather, we base it on the reports of school coordinators, teachers, principals, and superintendents. Later chapters of this report look at just what services the students do 'receive.'

Selection for Compensatory Services and Student's Educational Status. Twenty-four analyses were performed in order to investigate whether the educationally needy students in CE schools are selected to receive compensatory services. There were six analyses (one for each grade) that examined the differences between the mean reading achievement percentile scores of students selected to receive CE (CE selectees) and students not selected (CE non-selectees); six similar analyses for mathematics scores; six cross-tabulations of the student's current needs for compensatory reading services as judged by his/her teacher and his/her CE selection status; and six similar cross-tabulations for mathematics. (For the comparisons made here, the achievement percentile scores are based on CTBS scores that were not debiased.)

Table 3-1 gives the means and standard deviations of the reading and math scores by CE selection status for each of the six grades. It is important to note that these achievement scores indicate the student's educational attainment at the beginning of the school year. Thus, they reflect the student's need for compensatory services rather than the outcome of CE receipt. The mean scores for the CE selectees are clearly lower than those for the non-selectees. The mean score difference between CE selectees and non-selectees is smallest in the 1st grade, then sharply increases in the 2nd grade, especially for reading. The means for compensatory reading students drop steadily as grade level increases, which likely reflects a combination of the more refined selection methods used in the upper grades and the greater discriminability of tests at the higher levels. For math the grade trend is similar but not as pronounced.

Table 3-1

Mean Reading and Math Percentile Scores of Students in CE Schools by CE Selection Status and Grade*

	CE Selectees			CE Non-Selectees		
Grade	Mean	S.D.	N	Mean	S.D.	N
			Reading			
1	40.52	26.22	2,950	50.78	29.25	9,399
2	31.08	23.13	3,176	55.96	28.26	7,903
3	28.72	22.24	3,144	55.61	27.67	7,767
4	29.15	22.01	2,749	54.61	28.02	7,921
5	26.13	21.16	2,605	54.46	27.63	8,262
6	26.34	21.29	2,428	55.51	27.80	10,296
Total	30.54	23.33	17,052	54.43	28.18	51,548
			Math			
1	39.66	25.88	1,942	50.42	28.98	10,368
2	35.74	26.99	1,790	51.63	28.50	9,261
3	30.32	24.80	1,927	51.24	28.40	8,979
4	33.86	25.11	1,883	51.70	28.70	8,770
5	30.86	24.81	1,762	51.33	28.26	9,099
6	31.81	24.72	1,715	52.10	28.73	10,986
Total	33.77	25.61	11,019	51.41	28.61	57,463

*The reading and math scores were obtained at the beginning of the school year (Fall, 1976).

In terms of teachers' judgments of the students' current need for CE, Table 3-2 presents the percentage of CE selectees who are judged as requiring compensatory services in reading and math by grade. Overall, about three-quarters of reading CE selectees are judged to be currently in need, while approximately one-fifth of non-selectees are judged to be needy. The percentage of needy selectees does not differ much across grades except that it is lowest (67%) in grade 1. For mathematics, the percentage of needy selectees is smaller than for reading (about two-thirds), while the percentage of needy non-selectees is approximately equal to that for reading. The variation of the percentages of needy math selectees across grades is small and similar to the trend found in reading, with a notable exception for grade 5.

In summary, there is a greater percentage of reading CE selectees judged by their teachers as needing CE than that of math CE selectees. For both reading and math, the majority of CE selectees are indeed educationally needy as judged by their teachers.

Table 3-2

Percentage of CE Selectees Who are Judged by Teachers as Needing CE for Reading and Math, by Grade

	CE Selectees				CE Non-Selectees			
	Judged as Needy		Judged as Not Needy		Judged as Needy		Judged as Not Needy	
Grade	N	%	N	%	N	%	N	%
				Reading				
1	2,093	67.0	1,029	33.0	2,199	22.6	7,540	77.4
2	2,585	77.9	732	22.1	1,637	20.1	6,520	79.9
3	2,454	76.0	777	24.0	1,497	18.5	6,586	81.5
4	2,084	74.2	723	25.8	1,626	20.0	6,518	80.0
5	2,125	78.7	574	21.3	1,612	19.0	6,860	81.0
6	1,882	76.0	594	24.0	1,727	16.4	8,792	83.6
Total	13,223	74.9	4,429	25.1	10,298	19.4	42,816	80.6
				Math				
1	1,193	58.7	838	41.3	2,119	19.6	8,711	80.4
2	1,197	64.6	657	35.4	1,701	17.7	7,919	82.3
3	1,283	65.1	689	34.9	1,744	18.7	7,598	81.3
4	1,217	63.3	705	36.7	1,807	20.0	7,222	80.0
5	1,313	71.9	513	28.1	1,885	20.2	7,460	79.8
6	1,113	63.5	640	36.5	1,956	17.4	9,286	82.6
Total	7,316	64.4	4,042	35.6	11,212	18.9	48,196	81.1

The Relationship Among Student Characteristics and Educational Services

To show how characteristics of educational services received are associated with student characteristics, correlations and cross tabulations were obtained for a set of measures of these characteristics. Table 3-3 exhibits the intercorrelations among 9 student characteristics and 27 indicators of services received by students. Note again that all achievement scores were obtained at the beginning of the school year to indicate student initial educational status. The student characteristics were also grouped into categories and cross-tabulated with two qualitative variables describing the reading and math achievement level of the class with which the student is associated. The cross-tabulations are shown in Table 3-4 for reading and Table 3-5 for math. A summary of the relationships with a correlation of 0.10 or larger is presented below for each of the 9 student characteristics.

Minority/Majority Status of Students. Student majority status (being non-Hispanic white/ Caucasian) correlates negatively with the following measures of educational services received

Table 3-3

Intercorrelations* Among Student Characteristics and the Educational Services They Receive

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Student Characteristics																																			
1. Majority status	45	02	-14	15	32	27	-21	32	-06	-01	01	-01	-04	-07	-03	-14	-04	-02	06	-11	02	-01	-08	-06	-08	-06	-17	-03	00	05	-18	-23	-05	-18	-14
2. Family economic status		13	-07	29	45	37	-14	43	-05	01	01	-02	-05	-12	-11	-15	01	05	07	-09	02	-03	-06	-05	-09	-08	-16	-03	00	06	-27	-24	-07	-23	-22
3. Early childhood experience			03	13	11	09	01	08	07	01	-01	03	01	-05	-02	-02	01	01	09	-01	00	-01	-04	-01	-03	-01	-02	00	00	05	-06	-03	-01	-01	-08
4. Summer intellectual experience in preceding year				02	-11	-09	05	-13	05	01	-02	-01	03	02	06	10	01	02	-01	04	-02	00	00	03	03	04	11	02	03	-01	09	10	04	06	02
5. Parent involvement in school activity					16	13	-03	10	09	00	00	06	03	-06	-02	-01	02	02	08	00	-07	01	-01	-01	-04	-03	00	02	-02	06	-06	-04	01	-04	-09
6. Initial reading achievement						63	-07	67	-07	03	03	02	-10	-16	-22	-16	-04	02	08	-07	06	-03	-04	-08	-08	-13	-14	-06	00	05	-36	-26	-09	-15	-16
7. Initial math achievement							00	63	-04	03	02	03	-08	-13	-18	-14	-04	01	08	-05	06	-02	-03	-08	-08	-14	-14	-06	00	05	-30	-25	-09	-12	-15
8. Attitude toward learning and school								-04	11	02	01	06	02	02	01	04	02	-01	04	07	02	02	02	00	02	01	04	00	-01	02	04	04	00	04	05
9. Initial practical achievement									-22	07	-01	-07	-14	-12	-22	-21	-07	00	00	-12	07	-04	-03	-08	-07	-16	-15	-08	00	-01	-35	-28	-10	-14	-20
Educational Services Received																																			
10. Total hours of reading attended per year as follows:										26	12	38	22	09	13	18	08	08	52	36	09	04	05	05	-01	01	06	02	-05	24	09	02	01	01	08
11. Instruction by classroom teacher (21+ students)											-09	-17	-17	00	-09	-06	-06	-08	-16	17	48	-13	-13	-12	03	-04	-05	-05	-07	-17	-08	-04	-01	-03	05
12. Instruction by classroom teacher (14-20 students)												-18	-15	-05	-05	-06	-04	-06	-07	05	01	30	-03	-07	-02	-02	-05	-05	-02	-08	-05	-02	-01	-04	00
13. Instruction by classroom teacher (7-13 students)													-25	-02	-07	00	-02	-10	15	13	03	02	21	-10	-03	-03	-03	-03	-06	04	-05	-04	00	-02	01
14. Instruction by classroom teacher (1-6 students)														-04	10	07	08	04	09	08	-17	01	03	37	-03	03	06	08	-01	07	09	06	-01	06	03
15. Instruction by special reading teacher (7 or more students)															06	-01	-02	-02	-10	09	04	-02	03	-02	32	07	02	00	-02	-06	31	14	04	05	06
16. Instruction by special reading teacher (1-6 students)																03	01	-01	-07	06	-05	-01	02	06	03	35	03	03	00	-02	45	16	07	06	04
17. Assistance from paid reading aide (1-10 students)																	05	02	-05	06	-11	-02	05	06	01	01	54	07	05	-03	25	23	07	17	09
18. Tutoring from student or adult volunteer																		09	-01	-02	-10	-03	00	10	-01	00	07	38	03	01	03	05	02	03	01
19. Independent work with programmed material																			-13	05	-08	-05	-01	11	-04	-01	05	08	31	03	01	00	-01	02	-02
20. Independent work with non-programmed material																				09	-19	-02	-03	-02	-08	-07	-08	-02	-08	57	-12	-11	-03	-06	-01
21. Total hours of math attended per year as follows:																					29	08	22	15	12	14	15	06	10	34	07	13	00	07	-02
22. Instruction by classroom teacher (21+ students)																						-32	-34	-30	-06	-08	-15	-12	-13	-29	-08	-09	-02	-05	-03
23. Instruction by classroom teacher (14-20 students)																							04	-11	-02	-02	-03	-04	-04	-05	00	00	-01	00	-01
24. Instruction by classroom teacher (7-13 students)																								00	-01	00	05	01	-03	02	03	04	01	05	01
25. Instruction by classroom teacher (1-6 students)																									-02	04	11	14	07	04	08	07	02	06	01
26. Instruction by special math teacher (7 or more students)																										08	03	01	-02	-09	11	25	03	04	05
27. Instruction by special math teacher (1-6 students)																											04	02	02	-05	20	33	06	03	04
28. Assistance from paid math aide (1-10 students)																												10	09	-05	22	33	06	19	08
29. Tutoring from student or adult volunteer																													07	01	07	09	04	06	02
30. Independent work with programmed material																														-01	04	05	01	05	-01
31. Independent work with non-programmed material																															-05	-07	-03	-02	-04
32. Receipt of reading CE																																57	19	28	10
33. Receipt of math CE																																	21	31	10
34. Receipt of guidance or counseling as CE																																		21	02
35. Receipt of health or nutrition services as CE																																			07
36. Total hours absent from instruction per year																																			

*Decimal points omitted from correlation coefficients.

Table 3-4

Relative Reading Level of Class by Student Characteristics

Student Characteristics		Reading Level of Class							
		Low		Medium		High		Mixed	
		%	N	%	N	%	N	%	N
Race/ ethnicity	Minority	22.8	4,889	19.4	4,161	6.3	1,359	51.5	11,065
	Majority	13.3	7,578	25.7	14,685	14.5	8,302	46.5	26,577
Economic status	Low	24.1	5,971	20.7	5,118	5.5	1,355	49.8	12,337
	Medium	14.8	4,357	26.7	7,877	11.6	3,411	46.9	13,844
	High	8.8	2,139	24.0	5,851	20.1	4,895	47.1	11,461
Early childhood experience	Yes	15.2	10,431	24.1	16,514	12.8	8,788	48.0	32,925
	No	21.5	1,779	24.4	2,018	9.0	741	45.0	3,719
Summer intellectual experience	Low	20.2	3,366	24.5	4,071	9.3	1,541	46.0	7,658
	Medium	14.5	3,474	25.9	6,205	15.4	3,697	44.2	10,593
	High	16.4	3,136	24.4	4,674	15.3	2,938	44.0	8,429
Parental involvement	None	20.8	5,100	22.3	5,461	8.7	2,137	48.1	11,785
	Low	13.8	3,684	25.0	6,690	13.7	3,677	47.5	12,735
	High	13.5	3,683	24.5	6,695	14.1	3,847	48.0	13,122
Reading achievement	Low	28.7	7,480	18.5	4,820	2.7	713	50.1	13,090
	Medium	13.5	3,379	29.5	7,368	9.0	2,244	48.0	12,010
	High	3.1	710	24.2	5,571	27.7	6,358	45.0	10,349
Math achievement	Low	26.5	7,106	20.2	5,420	3.9	1,049	49.4	13,271
	Medium	14.0	3,420	27.6	6,725	9.9	2,417	48.4	11,795
	High	4.5	1,031	24.5	5,599	25.6	5,847	45.3	10,337
Affective total	Low	16.4	3,357	25.5	5,205	14.1	2,870	44.0	8,994
	Medium	15.7	3,079	25.3	4,962	14.0	2,757	45.0	8,847
	High	17.4	3,346	23.7	4,555	12.9	2,473	46.1	8,858
Practical achievement	Low	31.0	3,960	21.1	2,694	4.0	508	43.9	5,615
	Medium	15.2	1,966	30.6	3,962	12.2	1,581	41.9	5,423
	High	4.7	551	27.5	3,222	29.5	3,452	38.3	4,490
All students		16.1	10,997	24.4	16,684	12.9	8,778	46.6	31,776

Table 3-5

Relative Mathematics Level of Class by Student Characteristics

Student Characteristics		Mathematics Level of Class							
		Low		Medium		High		Mixed	
		%	N	%	N	%	N	%	N
Race/ ethnicity	Minority	17.7	3,805	23.4	5,029	5.6	1,195	53.3	11,445
	Majority	10.1	5,745	27.5	15,715	11.8	6,736	50.7	28,946
Economic status	Low	18.6	4,606	24.2	5,995	4.6	1,140	52.6	13,040
	Medium	11.3	3,320	28.5	8,407	9.9	2,905	50.4	14,857
	High	6.7	1,624	26.0	6,342	16.0	3,886	51.3	12,494
Early childhood experience	Yes	11.6	7,948	26.6	18,230	10.5	7,222	51.4	35,258
	No	17.1	1,409	26.1	2,154	7.4	609	49.5	4,085
Summer intellectual experience	Low	14.8	2,454	27.7	4,612	8.1	1,345	49.4	8,225
	Medium	11.0	2,646	28.0	6,723	12.5	2,997	48.4	11,603
	High	12.4	2,385	26.8	5,134	12.2	2,346	48.6	9,312
Parental involvement	None	16.6	4,056	25.1	6,142	7.4	1,805	51.0	12,480
	Low	9.9	2,657	27.0	7,224	11.3	3,023	51.8	13,882
	High	10.4	2,837	27.0	7,378	11.3	3,103	51.3	14,029
Reading achievement	Low	21.6	5,631	22.7	5,929	3.1	807	52.6	13,736
	Medium	10.0	2,501	30.6	7,654	8.1	2,014	51.3	12,832
	High	3.0	699	25.9	5,963	21.1	4,856	49.9	11,470
Math achievement	Low	21.4	5,757	23.2	6,232	3.3	885	52.0	13,972
	Medium	10.0	2,438	30.0	7,308	8.0	1,950	52.0	12,661
	High	2.7	615	26.3	5,996	21.2	4,839	49.8	11,364
Affective total	Low	12.7	2,601	27.1	5,544	11.3	2,302	48.9	9,979
	Medium	11.6	2,274	27.8	5,453	11.6	2,276	49.1	9,642
	High	12.6	2,425	27.0	5,191	10.7	2,049	49.7	9,567
Practical achievement	Low	24.6	3,140	23.9	3,050	3.7	476	47.8	6,111
	Medium	11.2	1,454	30.9	3,998	10.3	1,327	47.6	6,153
	High	3.3	388	26.6	3,118	23.7	2,782	46.3	5,427
All students		12.7	8,379	27.8	18,290	11.0	7,231	48.4	31,830

(because of the minority/majority dichotomy used in calculations, the negative correlations imply higher means or percentages for minority students):

- total hours per year of math instruction (r = -0.11)
- assistance from a paid aide for reading (r = -0.14)
- assistance from a paid aide for math (r = -0.17)
- receipt of reading CE services as reported by teachers (r = -0.18)
- receipt of math CE services as reported by teachers (r = -0.23)
- receipt of health and nutrition CE services (r = -0.18)
- hours absent per year from reading and math instructions (r = -0.14).

There are greater percentages of minority students in low and mixed achievement level reading and math classes.

Family Economic Status. Negative correlations were found for the students' family economic status with the following educational services. The list includes the correlation reflecting the amount of absence from instructions:

- instruction by special reading teachers (r = -0.12 for groups of 7 or more students, -0.11 for groups of less than 7 students)
- assistance from a paid aide for reading (r = -0.15)
- assistance from a paid aide for math (r = -0.16)
- receipt of reading CE services as reported by teachers (r = -0.27)
- receipt of math CE services as reported by teachers (r = -0.24)
- receipt of health and nutrition CE services (r = -0.23)
- hours absent per year from reading and math instructions (r = -0.22).

Students of low economic status have higher concentrations in reading and math classes of low and mixed achievement levels.

Early Childhood School Experience. The correlations of this variable with all measures of educational services received are low (< 0.10). The cross-tabulations show higher concentrations of children with no previous experience in kindergarten, Head Start, nursery or preschool in the low achievement level reading and math classes.

Summer Intellectual Experience. The extent of student summer intellectual experience in the preceding summer is positively correlated with assistance from paid aide and receipt of CE services:

- assistance from a paid aide for reading (r = 0.10)
- assistance from a paid aide for math (r = 0.11)

- receipt of math CE services (r = 0.10, note that r = 0.09 for reading CE services).

Students with low summer intellectual experience tend to be more concentrated in low and mixed achievement level reading and math classes.

Parental Involvement in Child's Schooling. All correlations of this variable with services received are low except for total hours of reading instruction attended per year (r = 0.09). It has a negative but small correlation (r = –0.09) with hours of absence from instructions. Cross-tabulations show that students whose parents have *no* involvement in school activities were more likely to be in low-achievement math and reading classes than students whose parents have *some* involvement in school activities.

Initial Reading Achievement. The correlations between student reading achievement percentile scores at the beginning of the school year and the following educational services received are negative and substantial:

- instruction by a classroom teacher in a class of less than 7 students (r = -0.10)
- instruction by special reading teachers (r = -0.16 for groups of 7 or more students, and -0.22 for groups of less than 7 students)
- assistance from a paid aide for reading (r = -0.16)
- instruction by special math teachers in groups of less than 7 students (r = -0.13)
- assistance from a paid aide for math (r = -0.14)
- receipt of reading CE services as reported by teachers (r = -0.36)
- receipt of math CE services as reported by teachers (r = -0.26)
- receipt of health and nutrition CE services (r = -0.15)
- hours absent per year from reading and math instructions (r = -0.16).

The correlations of reading achievement and indicators of math services received are, at least in part, due to the positive correlation between reading and math achievements (0.63). Not surprisingly, the cross-tabulations show that students with lower initial achievement scores were more likely to be in classes of low achievement level.

Initial Mathematics Achievement. Student math achievement percentile scores at the pretest time (Fall of 1976) are negatively correlated with the services received, and with absence from instruction:

- instruction by special math teachers in groups of less than 7 students (r = -0.14)
- assistance from a paid aide for math (r = -0.14)
- instruction by special reading teachers (r = -0.13 for groups of 7 or more students, and -0.18 for groups of less than 7 students)

- assistance from a paid aide for reading (r = -0.14)
- receipt of math CE services as reported by teachers (r = -0.25)
- receipt of reading CE services as reported by teachers (r = -0.30)
- receipt of health and nutrition CE services (r = -0.12)
- hours absent per year from reading and math instructions (r = -0.15).

As in the case of reading, students with lower initial achievement scores were more often associated with classes of low-achievement level.

Initial Practical Achievement. Pretest practical achievement scores correlate negatively with the following service indicators, and with absence from instruction:

- total hours of reading instruction (r = -0.22)
- instruction by a classroom teacher in a class of less than 7 students (r = -0.14)
- instruction by special reading teachers (r = -0.12 for groups of 7 or more students, and -0.22 for groups of less than 7 students)
- assistance from a paid aide for reading (r = -0.21)
- total hours of math instruction (r = -0.12)
- instruction by special math teachers in groups of less than 7 students (r = -0.16)
- assistance from a paid aide for math (r = -0.15)
- receipt of reading CE services as reported by teachers (r = -0.35)
- receipt of math CE services as reported by teachers (r = -0.28)
- receipt of guidance and counseling CE services (r = -0.10)
- receipt of health and nutrition CE services (r = -0.14)
- hours absent per year from reading and math instructions (r = -0.20).

Examination of the cross-tabulations in Tables 3-4 and 3-5 reveals that students with lower practical achievement scores are more concentrated in classes of low reading and math achievement levels.

Attitude Toward Learning and School. The total score for the student affective measure correlates positively with total hours of reading attended per year (r = 0.11). Its correlation with math attendance is slightly lower (r = 0.07). There is no noticeable tendency for students with less positive attitudes to be concentrated in reading or math classes of low achievement level.

The intercorrelations among the measures of educational services received show appreciable relationships between receipt of CE services and instruction by special teachers and paid aides, with a good deal of correlational overlap between reading and math services and CE receipt. Within both reading and math, instruction by regular teachers is negatively correlated with those by special teachers, indicating that instructional services provided by special teachers might have replaced those by regular teachers. Table 3-3 also shows a substantial and positive correlation between receipt of reading CE services and receipt of math CE services (r = 0.57).

Inspection of the correlations among the student characteristics reveals close relationships among reading, math, and practical achievement scores. Each of these achievement scores correlates moderately and positively with student family economic status and with student status as non-Hispanic Caucasian/White. The positive correlation between student family economic status and student majority status is also appreciable (r = 0.45). In contrast, the affective score is negatively correlated with family economic status and with student majority status. But the sizes of these correlations are considerably smaller than those found for achievement scores.

In summary, the instructional services that tend to be related to student characteristics are mainly:

- small class (less than 7 students) instruction by regular teachers
- instruction by special reading and/or math teachers
- instructional assistance by paid aides for reading and/or math
- receipt of reading and/or math CE services.

The students who receive more of these services tend to be:

- minority students
- students from families of low economic status
- students with low pretest reading, math, and practical achievement scores.

These students also tend to be absent from instructions more often.

For non-instructional services, it is found that receipt of guidance and counseling CE services correlates less with student characteristics than receipt of health and nutrition CE services.

Attendance Rates and Student's Economic and Educational Status

In Technical Report #3, it was found that economic status was related to the number of weeks of school attended; i.e., students whose families were classified as poor attended, on the average, 33 weeks of school in 1976-77, while students from non-poor families attended about 34 weeks of school. In addition, there was a weak relationship between achievement and attendance, such that high-achieving students attended more school than low-achieving students. However, these analyses did not identify whether the differences in attendance were due to absenteeism, or to variations in the length of the school year. The analyses reported here are an attempt to distinguish these two alternatives.

Students were classified as either poor or non-poor, based on each student's economic status variable, a composite variable whose development is discussed in Chapter 2. The students were also classified as either low-achievers or regular achievers, based on their CTBS reading and math scores from the Fall 1976 test administration. A low-achieving student was defined as one who scored at or below the 33 percentile on either reading or math (or both), while a regular achiever was one who scored above the 33 percentile in both reading and math. Thus, we have a two-way classification of students: economic status (poor and non-poor), and achievement status (low achievers and regular achievers).

The two dependent variables which we examined were 'length of the school year' (an item from the Principal Questionnaire, Part B), and 'rate of attendance.' Rate of attendance was obtained by dividing the number of days attended in 1976-77 (from the Student Participation and Attendance Records) by the length of the school year, in days.

For each grade, a two-way analysis-of-variance was performed, using economic status and achievement status as the grouping variables, and length of school year as the dependent variable. A second analysis-of-variance used rate of attendance as the dependent variable.

Table 3-6 presents the mean length of the school year (in days) for each of the four groups of students at each grade. As can be seen, the means are very similar across groups. These similarities are confirmed by the analysis-of-variance, for in no grade did the grouping classifications account for more than 0.3 percent of the variance in length of school year. Thus, it appears that poor students are offered the same number of days of schooling as are their non-poor peers, and that low-achieving students are offered the same number of days of schooling as are their regular-achieving peers.

The situation is somewhat different, however, when we look at rates of attendance. Table 3-7 presents the rates of attendance (expressed as percentage of days attended out of all days offered) for each group at each grade level. Across all grades the pattern is consistent, the rate of attendance increases across the groups in the following order: poor low-achievers, and poor regular-achievers, non-poor low achievers, and non-poor regular achievers. Thus, poor students who are also low-achievers attend proportionately the least amount of school while non-poor students who are regular achievers attend proportionately the most amount of school. The analysis-of-variance results indicate that economic status accounts for 1.7 percent to 3.2 percent of the variance in rate of attendance, while achievement status accounts for 0.9 percent to 1.4 percent of the variance.

Thus, it appears that disadvantaged students are offered the same amount of schooling as are non-disadvantaged students, but that disadvantaged students have lower rates of attendance than do their non-disadvantaged peers.

Student Characteristics and CE Selection

This section examines the relationship between characteristics of students and their CE selection status. Of the six categories of CE selection, Title I selectees, and non-selectees in Title I schools are further subgrouped according to their school district's policy of allocating CE

Table 3-6

Length of School Year (in Number of Days) for Disadvantaged and Non-Disadvantaged Students

		Low Economic Status		High Economic Status	
Grade		Low Ach.	Reg. Ach.	Low Ach.	Reg. Ach.
1	M	176.89	176.74	176.88	176.84
	S.D.	6.33	5.75	5.94	5.50
	N	(1435)	(641)	(6186)	(5333)
2	M	176.65	176.54	177.17	177.39
	S.D.	6.60	5.81	5.50	4.99
	N	(1325)	(427)	(4554)	(5875)
3	M	178.11	176.92	177.45	177.65
	S.D.	5.72	5.77	5.10	4.58
	N	(1344)	(403)	(4239)	(6083)
4	M	177.26	176.86	177.41	177.23
	S.D.	6.10	5.31	4.90	4.73
	N	(1360)	(438)	(4425)	(5620)
5	M	178.21	177.09	177.76	177.47
	S.D.	5.96	6.12	4.91	4.87
	N	(1377)	(399)	(4315)	(6019)
6	M	177.42	176.66	176.94	177.09
	S.D.	5.82	6.07	4.60	4.64
	N	(1321)	(397)	(5585)	(7069)

funds. The Title I districts are divided into three types: (1) districts that receive only Title I funds; (2) districts that 'layer' CE services by using most of non-Title I CE funds to provide additional services to Title I students; and (3) districts that 'spread' CE services by using most of non-Title I CE funds to serve more students. Thus, students were classified into ten groups based on their reading CE selection status. A similar classification was developed using math CE selection status. The ten groups of students are described below:

Students who are selected to receive Title I services (alone or in combination with Other CE services)

In schools whose districts receive only Title I funds

In schools whose districts 'layer' CE services

In schools whose districts 'spread' CE services

Table 3-7

Rates of Attendance (Number of Days Attended Divided by Length of School Year) for Disadvantaged and Non-Disadvantaged Students

		Low Economic Status		High Economic Status	
Grade		Low Ach.	Reg. Ach.	Low Ach.	Reg. Ach.
1	M	91.89	93.86	94.55	95.87
	S.D.	9.39	7.06	6.84	5.31
	N	(1148)	(483)	(6108)	(5280)
2	M	93.05	94.85	95.28	96.56
	S.D.	7.47	5.91	5.95	4.77
	N	(1099)	(285)	(4484)	(5822)
3	M	92.68	94.28	95.43	96.68
	S.D.	8.48	7.25	5.95	4.81
	N	(1126)	(294)	(4174)	(6024)
4	M	93.39	95.34	95.50	96.63
	S.D.	9.17	6.06	6.34	4.97
	N	(1178)	(325)	(4357)	(5593)
5	M	92.61	94.69	95.43	96.79
	S.D.	9.57	7.32	6.48	5.00
	N	(1196)	(314)	(4242)	(5949)
6	M	93.02	94.39	95.32	96.80
	S.D.	8.52	7.41	6.51	4.91
	N	(1161)	(317)	(5537)	(7039)

Students who are selected to receive only Other CE services

In Title I schools

In Other CE only schools

Students who are not selected to receive CE services

In Title I schools whose districts receive only Title I funds

In Title I schools whose districts 'layer' CE services

In Title I schools whose districts 'spread' CE services

In Other CE only schools

In non-CE schools

Nine student characteristics were examined to compare the ten student groups formed on the basis of their reading CE selection status. The results are presented in Tables 3-8 to 3-16. The same comparisons were also made among the ten math CE selection groups. The results were very similar to those obtained in the case of reading and are presented in Appendix B.

Sex of Student. Table 3-8 presents the percentages of male students for each of the ten reading groups at each grade level. Table B-1 in Appendix B presents parallel data using the math CE selection groups. These two tables together indicate a tendency toward higher concentrations of males in the CE groups than in the non-CE groups.

Minority Status. Table 3-9 presents the percentage of minority students in each of the ten reading groups by grade level. The highest concentrations of minorities are found in Title I schools associated with districts that 'spread' CE services. In these schools, the minority percentage is higher for the group of CE selectees than for the non-selectee group. Though the extent of minority concentration differs among the three types of Title I schools, the percentages of minorities are higher in the Title I selectee group than the non-CE group for each case. For schools that receive only Other CE funds, there are proportionately more minorities among the CE selectees than the non-selectees. The results for the math groups exhibit a similar pattern, though the percentages of minority students in the five groups of CE selectees tend to be larger than those for the corresponding reading groups. For details, the reader may refer to Table B-2 in Appendix B.

Economic Status. The differences among the ten CE selection groups with respect to student family economic status follow a parallel pattern to that found for minority status. This is partially due to the moderate correlation (0.45, see Table 3-1) between the two measures. Table 3-10 gives the averages of the economic indicator (predicted family income expressed as a percentage of Orshansky's poverty level) for each of the ten reading groups by grade. It shows that the Title I selectees in schools whose districts 'spread' CE services have the lowest averages. In general, the five CE groups tend to come from families of lower economic status compared to the non-CE groups. The only one exception is found in the group of nonselectees attending Title I schools whose districts 'spread' CE services. Students in this group are of lower economic status than the group of CE selectees in Other CE only schools, except for grade 6. For the six grades results of ANOVAs indicate that 13 to 16 percent of the variances of this economic measure in the study sample is accounted for by the differences among the ten selection groups. Again, similar findings for the ten math groups may be observed in Table B-3 in Appendix B.

Early Childhood School Experience. Table 3-11, and Table B-4 in the Appendix, display the percentages of students who had some form of early childhood school experience (kindergarten, Head Start, summer school, nursery/day care, or preschool) for each of the ten selection groups. The percentages are generally high, ranging in the 80s and 90s. The percentages are lowest in the two groups of Title I selectees in schools associated with districts which receive only Title I funds, and which 'layer' CE services. In contrast, both the CE and non-CE groups in Other CE only schools have the highest proportions of students with early childhood educational experience, except for a few cases in the higher grades.

Parental Involvement in School Activities. The indicator for the extent of parental involvement in school activity can range from 0 to 12. Inspection of the averages given in Table 3-12 reveals a generally low level of parental involvement. With the exception of the CE group in

Table 3-8

Percentage of Students Who are Male, by District Allocation Pattern, and by Reading CE Category

District Allocation Pattern and Reading CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I schools							
Districts receive only Title I funds	% Male	57.77	61.71	58.01	54.69	56.58	57.23
	N	611	713	674	512	433	346
Districts 'layer' CE services	% Male	54.51	61.30	58.81	57.87	57.69	61.64
	N	255	323	386	254	312	292
Districts 'spread' CE services	% Male	55.75	57.71	55.74	57.98	55.42	55.70
	N	843	804	854	802	738	544
Other CE only CE selectees							
In Title I schools	% Male	50.88	52.25	54.78	55.10	56.67	54.47
	N	855	865	743	706	667	738
In Other CE only schools	% Male	55.72	53.31	54.58	57.12	57.40	60.94
	N	551	604	568	527	547	553
Non-CE selectees in Title I schools							
Districts receive only Title I funds	% Male	48.78	49.28	47.85	48.08	48.61	50.35
	N	2749	2279	2142	2161	2263	2286
Districts 'layer' CE services	% Male	50.04	48.41	49.15	44.57	48.11	48.30
	N	1145	1008	1003	1050	1060	1621
Districts 'spread' CE services	% Male	49.90	49.42	49.61	47.20	49.67	48.43
	N	2932	2347	2308	2354	2438	2193
Non-CE selectees in Other CE only schools	% Male	49.88	49.04	48.31	49.61	49.20	49.59
	N	2895	2496	2606	2560	2683	4396
Non-CE selectees in non-CE schools	% Male	49.77	49.39	53.74	54.34	51.60	51.34
	N	1302	1146	1215	1211	1281	1681

Table 3-9

Percentage of Students Who are Minority, by District Allocation Pattern, and by Reading CE Category

District Allocation Pattern and Reading CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I schools							
Districts receive only Title I funds	Minority	27.42	23.79	24.93	20.77	18.49	17.95
	N	620	723	686	520	438	351
Districts 'layer' CE services	% Minority	45.56	32.51	38.62	34.50	47.83	40.40
	N	259	323	391	258	322	297
Districts 'spread' CE services	% Minority	57.09	54.39	65.11	65.62	67.96	73.06
	N	867	820	880	829	749	553
Other CE only CE selectees							
In Title I schools	% Minority	41.42	43.47	47.91	37.34	41.30	38.16
	N	874	888	766	723	678	760
In Other CE only schools	% Minority	36.27	34.29	34.19	43.95	44.68	45.36
	N	579	624	585	537	555	560
Non-CE selectees in Title I schools							
Districts receive only Title I funds	% Minority	14.41	14.80	12.46	12.63	10.57	9.93
	N	2867	2398	2231	2256	2337	2357
Districts 'layer' CE services	% Minority	27.42	25.38	26.92	28.92	29.52	20.39
	N	1218	1060	1070	1096	1101	1677
Districts 'spread' CE services	% Minority	48.11	53.01	50.40	48.96	48.37	42.32
	N	3128	2492	2472	2504	2576	2271
Non-CE selectees in Other CE only schools	% Minority	18.70	16.56	16.36	19.89	18.30	15.10
	N	3006	2620	2671	2651	2771	4490
Non-CE selectees in non-CE schools	% Minority	35.30	30.14	26.03	24.80	25.76	20.85
	N	1371	1191	1260	1250	1316	1727

Table 3-10

Mean Student Economic Status by District Allocation Pattern, and by Reading CE Category

District Allocation Pattern and Reading CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I schools							
Districts receive only Title I funds	Mean	181.31	186.89	186.11	190.68	202.08	196.13
	S.D.	84.05	8.60	84.62	85.83	82.93	87.85
	N	613	715	675	513	433	346
Districts 'layer' CE services	Mean	171.74	189.78	190.38	174.88	176.20	177.24
	S.D.	80.01	82.91	79.98	85.22	81.10	80.07
	N	255	323	389	255	312	292
Districts 'spread' CE services	Mean	163.17	172.77	159.79	156.09	152.26	154.14
	S.D.	78.90	85.30	76.56	71.28	68.40	70.02
	N	845	807	855	803	739	544
Other CE only selectees							
In Title I schools	Mean	192.40	197.64	183.53	182.62	180.64	189.83
	S.D.	81.39	81.68	79.68	87.74	81.81	82.85
	N	857	866	744	707	668	739
In Other CE only schools	Mean	234.19	232.84	224.69	210.32	204.34	204.72
	S.D.	95.69	91.42	94.07	93.85	87.34	82.67
	N	552	606	568	529	547	555
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	239.59	246.27	243.97	239.95	240.69	247.92
	S.D.	82.89	78.67	81.39	82.43	84.05	79.95
	N	2754	2286	2144	2167	2267	2291
Districts 'layer' CE services	Mean	235.27	234.79	238.47	226.05	226.09	244.01
	S.D.	86.11	86.72	83.46	89.81	92.83	86.43
	N	1146	1014	1012	1053	1067	1626
Districts 'spread' CE services	Mean	211.11	204.20	206.18	207.23	202.13	212.96
	S.D.	90.79	90.83	90.62	88.36	87.21	89.68
	N	2940	2354	2311	2360	2443	2196
Non-CE selectees in Other CE only schools	Mean	274.12	281.10	276.24	271.68	272.49	270.98
	S.D.	80.87	77.40	79.71	82.03	80.15	74.54
	N	2899	2503	2616	2564	2695	4406
Non-CE selectees in non-CE schools	Mean	246.85	248.70	258.18	263.81	261.66	262.02
	S.D.	83.77	82.38	83.03	84.01	86.11	75.01
	N	1302	1151	1217	1212	1287	1682

Table 3-11

Percentage of Students Who had Some Form of Early Childhood Schooling by District Allocation Pattern, and by Reading CE Category

District Allocation Pattern and Reading CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I schools							
Districts receive only Title I funds	%	80.03	87.27	79.24	76.69	83.10	81.23
	N	601	699	655	502	426	341
Districts 'layer' CE services	%	90.04	83.91	85.53	80.00	76.57	71.83
	N	251	317	380	245	303	284
Districts 'spread' CE services	%	92.33	92.08	88.36	85.05	85.67	83.69
	N	834	783	842	769	726	521
Other CE only CE selectees							
In Title I schools	%	93.44	94.13	91.98	87.34	82.06	83.05
	N	839	852	736	695	652	708
In Other CE only schools	%	96.51	96.35	93.74	92.64	89.47	85.66
	N	545	576	559	516	532	516
Non-CE selectees in Title I schools							
Districts receive only Title I funds	%	92.84	92.16	89.78	88.15	84.69	80.90
	N	2722	2244	2104	2118	2204	2257
Districts 'layer' CE services	%	91.68	88.88	89.96	87.54	83.32	81.61
	N	1130	989	986	1003	1031	1599
Districts 'spread' CE services	%	93.31	92.79	89.51	87.65	87.36	86.33
	N	2883	2262	2260	2308	2389	2158
Non-CE selectees in Other CE only schools	%	96.45	96.29	93.20	93.29	89.54	83.87
	N	2870	2451	2574	2519	2639	4283
Non-CE selectees in non-CE schools	%	95.09	84.82	92.92	92.16	91.70	88.86
	N	1283	1139	1201	1186	1265	1651

Table 3-12

Mean Parental Involvement, by District Allocation Pattern, and by Reading CE Category

District Allocation Pattern and Reading CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I schools							
Districts receive only Title I funds	Mean	2.01	1.73	1.61	1.73	1.76	1.39
	S.D.	1.68	1.61	1.56	1.67	1.55	1.45
	N	613	715	675	513	433	346
Districts 'layer' CE services	Mean	1.80	1.86	1.74	1.54	1.45	1.24
	S.D.	1.51	1.79	1.83	1.67	1.71	1.59
	N	255	323	389	255	312	292
Districts 'spread' CE services	Mean	1.53	1.45	1.24	1.38	1.45	1.34
	S.D.	1.59	1.59	1.49	1.66	1.72	1.77
	N	845	807	855	803	739	544
Other CE only selectees							
In Title I schools	Mean	1.84	1.86	1.64	1.56	1.52	0.99
	S.D.	1.57	1.72	1.66	1.50	1.53	1.47
	N	857	866	744	707	668	739
In Other CE only schools	Mean	2.39	2.68	2.29	2.19	1.86	1.34
	S.D.	1.72	1.88	1.82	1.84	1.79	1.66
	N	552	606	568	529	547	555
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	2.27	2.03	2.04	2.03	2.07	1.65
	S.D.	1.67	1.62	1.62	1.67	1.61	1.56
	N	2754	2286	2144	2167	2267	2291
Districts 'layer' CE services	Mean	2.15	2.21	1.79	1.85	1.48	1.40
	S.D.	1.77	1.85	1.62	1.73	1.59	1.51
	N	1146	1014	1012	1053	1067	1626
Districts 'spread' CE services	Mean	1.92	1.69	1.58	1.55	1.58	1.58
	S.D.	1.71	1.68	1.69	1.63	1.65	1.77
	N	2940	2354	2311	2360	2443	2196
Non-CE selectees in Other CE only schools	Mean	2.41	2.48	2.11	2.02	1.85	1.32
	S.D.	1.67	1.73	1.67	1.68	1.63	1.48
	N	2899	2503	2616	2564	2695	4406
Non-CE selectees in non-CE schools	Mean	2.10	2.00	2.23	2.08	1.93	1.28
	S.D.	1.72	1.70	1.81	1.73	1.77	1.47
	N	1302	1151	1217	1212	1287	1682

Other CE only schools, parents of students in the other four CE groups tend to have less involvement in the schools of their children than do parents of non-selectees. For the two groups of students in Other CE only schools their parents are often more involved in school activities. Overall, the differences in the degree of parental involvement among the ten reading selection groups are not substantial. Similar results for the ten math groups may be found in Table B-5 of Appendix B.

Summer Intellectual Experience. The comparisons among the ten reading CE selection groups with respect to the student's summer activities are summarized in Table 3-13. The summer intellectual experience score reflects the amount of educationally related exposures during the summer of 1976. There were no records for grade 1 students and thus the results are given only for grades 2 to 6. Examining Table 3-13, we note that the two groups of non-Title I CE selectees in Title I schools and in Other CE only schools have the highest average scores. The average scores for the other three groups of CE selectees are also somewhat higher than the non-selectee groups. Since this measure is, in large part, an index of summer school attendance, the finding may imply that CE selectees are more likely to have summer school available to them. It may also be remarked that the differences among the three Title I selectee groups in the three types of districts are not appreciable, though the group in districts that 'spread' CE services tends to have higher means. Overall, the differences among the ten groups are not substantial. Results for the comparisons among the ten math groups are presented in Table B-6 of Appendix B.

Initial Reading and Math Achievement. Table 3-14 presents the average Reading percentile scores (on the basis of the debiased Reading scale) for each of the ten reading CE selection groups. Except for grade 1, the three groups of Title I selectees have the lowest average percentile scores. The two groups of non-Title I CE selectees achieve slightly higher scores. The CE selectees largely achieve below the median score while the non-selectees typically attain scores at or above the median. There is a tendency for the Title I selectee groups in districts which 'spread' CE services to score lower than the other two groups of Title I selectees. Among the non-selectee groups, those in Title I schools whose districts 'spread' CE services also have the lowest averages (below the median). This may suggest that the generally lower level of student achievement has led the districts to use additional non-Title I CE funds to provide services to more low-achieving students. The ten reading groups differ substantially in their initial reading achievement level. The analyses found that 17 to 20 percent of the total-score variance can be accounted for by the group mean differences, with an exception for grade 1 where only 3 percent of the variance is due to group differences. Since these percentile scores were obtained at the beginning of the school year, these results show that lower achieving students are more likely to be selected to receive compensatory services. Table B-7 in Appendix B gives the average math percentile scores for the ten math selection groups. It reveals a similar finding for math selection – though the differences among groups in achievement scores are less pronounced (for grades 2 to 6, 7- to 10-percent of total score variances can be explained by the group mean differences).

Initial Practical Achievement. The practical achievement test was administered to students in grades 4, 5, and 6. The average scores for the ten reading selection groups are displayed in Table 3-15. As may be seen from this table, the differences among the groups follow a pattern similar to that for reading achievement. On the average, the three groups of Title I selectees score lower than the non-Title I CE selectees, who in turn score lower than the non-selectees. For the three grades, the ANOVA results indicate that 12 to 13 percent of the total score variances can be explained by the mean differences among the ten groups. The data for the ten math groups are given in Table B-8 of Appendix B.

Table 3-13

Mean Summer Intellectual Experience Score by District Allocation Pattern, and by Reading CE Category

District Allocation Pattern and Reading CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I schools							
Districts receive only Title I funds	Mean	NA	9.04	10.71	9.71	8.45	8.55
	S.D.	NA	16.83	18.26	15.61	13.71	14.82
	N	NA	689	658	500	417	339
Districts 'layer' CE services	Mean	NA	8.02	9.38	11.00	11.65	7.91
	S.D.	NA	15.99	17.33	19.29	18.59	15.52
	N	NA	290	342	250	305	292
Districts 'spread' CE services	Mean	NA	8.05	10.64	14.11	10.98	10.80
	S.D.	NA	15.46	17.95	22.27	18.11	17.84
	N	NA	757	818	765	685	526
Other CE only selectees							
In Title I schools	Mean	NA	12.21	13.02	13.37	13.10	12.20
	S.D.	NA	19.11	19.90	20.78	20.05	18.98
	N	NA	803	685	682	639	716
In Other CE only schools	Mean	NA	11.88	15.30	14.75	12.43	11.12
	S.D.	NA	17.46	20.44	21.98	20.60	18.52
	N	NA	516	486	526	533	535
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	NA	6.78	7.60	7.33	7.02	6.20
	S.D.	NA	12.27	12.51	10.65	10.11	8.68
	N	NA	2219	2057	2128	2204	2246
Districts 'layer' CE services	Mean	NA	7.42	8.90	10.37	8.03	6.40
	S.D.	NA	13.16	14.65	16.22	12.80	9.79
	N	NA	898	904	1030	1033	1613
Districts 'spread' CE services	Mean	NA	6.73	7.60	8.85	8.57	6.85
	S.D.	NA	12.35	13.22	15.02	14.60	12.02
	N	NA	2235	2127	2242	2346	2030
Non-CE selectees in Other CE only schools	Mean	NA	7.33	8.17	9.04	7.58	6.27
	S.D.	NA	12.13	13.25	13.96	11.13	9.17
	N	NA	2416	2462	2496	2638	4319
Non-CE selectees in non-CE schools	Mean	NA	8.73	10.50	10.46	8.03	7.87
	S.D.	NA	14.57	16.68	15.88	12.40	12.05
	N	NA	943	958	1178	1246	1665

Table 3-14

Mean Reading Achievement (CTBS Debiased Percentile Scores) by District Allocation Pattern, and by Reading CE Category

District Allocation Pattern and Reading CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I schools							
Districts receive only Title I funds	Mean	37.73	28.14	27.95	28.85	30.06	27.25
	S.D.	24.89	19.86	20.45	20.25	19.94	20.96
	N	568	691	663	550	418	341
Districts 'layer' CE services	Mean	35.48	27.21	24.21	23.92	18.79	22.14
	S.D.	23.33	18.04	17.21	16.74	16.31	15.41
	N	242	311	381	252	300	291
Districts 'spread' CE services	Mean	41.65	23.08	21.25	23.10	18.52	19.93
	S.D.	25.30	17.82	15.13	16.76	15.37	15.34
	N	792	760	836	788	705	531
Other CE only selectees							
In Title I schools	Mean	41.99	40.47	36.70	35.67	34.60	33.05
	S.D.	25.76	27.73	27.17	26.11	25.46	25.48
	N	815	826	706	682	640	724
In Other CE only schools	Mean	41.88	32.72	33.21	32.55	27.04	26.54
	S.D.	30.17	23.77	24.51	23.88	20.61	20.76
	N	533	588	558	527	542	541
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	50.32	55.99	57.76	56.76	58.63	55.38
	S.D.	28.93	27.34	26.45	26.56	26.07	26.86
	N	2657	2240	2080	2126	2204	2246
Districts 'layer' CE services	Mean	47.09	53.29	52.51	50.14	51.81	55.66
	S.D.	27.86	28.06	28.36	28.11	28.45	28.04
	N	1118	978	975	1019	1021	1611
Districts 'spread' CE services	Mean	49.08	47.95	47.78	47.76	45.61	49.49
	S.D.	29.11	29.27	27.39	28.10	27.42	28.22
	N	2838	2244	2223	2289	2397	2105
Non-CE selectees in Other CE only schools	Mean	54.41	64.17	61.64	60.92	60.05	58.57
	S.D.	29.94	26.22	26.85	27.50	26.68	27.44
	N	2786	2441	2489	2487	2640	4334
Non-CE selectees in non-CE schools	Mean	48.26	48.08	51.71	52.50	53.36	51.43
	S.D.	30.37	28.25	28.02	28.94	29.62	28.78
	N	1268	1111	1160	1184	1250	1662

Table 3-15

Mean Practical Achievement Score, by District Allocation Pattern, and by Reading CE Category*

District Allocation Pattern and Reading CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I schools							
Districts receive only Title I funds	Mean	NA	NA	NA	10.54	14.62	16.01
	S.D.	NA	NA	NA	5.05	5.51	6.38
	N	NA	NA	NA	499	418	340
Districts 'layer' CE services	Mean	NA	NA	NA	9.07	11.65	15.65
	S.D.	NA	NA	NA	4.31	5.32	6.06
	N	NA	NA	NA	250	305	292
Districts 'spread' CE services	Mean	NA	NA	NA	8.72	12.21	14.13
	S.D.	NA	NA	NA	4.50	5.63	6.10
	N	NA	NA	NA	787	701	527
Other CE only selectees							
In Title I schools	Mean	NA	NA	NA	10.82	15.15	16.94
	S.D.	NA	NA	NA	5.76	6.83	6.75
	N	NA	NA	NA	678	638	727
In Other CE only schools	Mean	NA	NA	NA	10.55	13.95	15.80
	S.D.	NA	NA	NA	5.20	6.14	5.99
	N	NA	NA	NA	518	538	535
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	NA	NA	NA	15.34	20.07	21.84
	S.D.	NA	NA	NA	6.18	5.94	5.67
	N	NA	NA	NA	2123	2195	2243
Districts 'layer' CE services	Mean	NA	NA	NA	13.75	18.02	21.60
	S.D.	NA	NA	NA	6.40	6.94	5.85
	N	NA	NA	NA	1024	1031	1609
Districts 'spread' CE services	Mean	NA	NA	NA	13.90	17.57	20.63
	S.D.	NA	NA	NA	6.45	6.71	6.12
	N	NA	NA	NA	2280	2392	2087
Non-CE selectees in Other CE only schools	Mean	NA	NA	NA	16.27	20.10	22.43
	S.D.	NA	NA	NA	6.53	6.14	5.51
	N	NA	NA	NA	2483	2628	4321
Non-CE selectees in non-CE schools	Mean	NA	NA	NA	14.47	19.30	21.25
	S.D.	NA	NA	NA	6.48	6.67	6.09
	N	NA	NA	NA	1180	1242	1656

*This test was not administered to students in grades 1, 2, and 3.

Attitude Toward Learning and School. The Student Affective Measure instrument was administered to students in the Fall of 1976, except for grade 1. The average scores of this measure are presented in Table 3-16 for each of the ten reading selection groups by grades. Mean differences are very small among the groups. Similar results for the ten math groups are given in Table B-9 of Appendix B.

In summary, the student characteristics most closely related to CE selection status are reading, math, and practical achievement, as well as minority and economic status. Sex, attitude toward learning and school, early childhood school experience, summer intellectual experience, and parental involvement in school activities have little relationship to the student's CE selection status.

Student Characteristics as Predictors of CE Selection

To investigate the question of how students are selected for CE services, five student characteristics were employed as predictors for CE selection. Students' need for CE as judged by the teacher, receipt of CE services in the previous year, achievement level, other language spoken in home, and a proxy for the family economic measure (see Chapter 2 for a description) were used in the regression model. Analyses were performed separately for reading and math, by grade. Students in schools that do not have compensatory programs in the subject area were excluded from the analyses. A common entry order for the predictors was determined from preliminary analyses with a step-wise regression technique. This entry order was specified for all regression analyses performed in the subject area. The criterion variable used is a dichotomy of selected *versus* not selected for CE services in 1976-77 as recorded in the Compensatory Education Roster.

Table 3-17 presents the simple correlations of the predictors with CE selection and the proportional reduction of variances in the criterion variable by each successive entry of a predictor following the prescribed entry order. The five predictors are listed in the table according to their order for entering into the prediction equations. The order is similar for reading and math with one difference being that other-language-spoken precedes achievement score in the analyses for math.

Across the grades and for both reading and math, teacher judgments of need for CE in the specific subject typically has the highest correlation with the dichotomy of CE selection status. Exceptions are observed in grades 4 and 6 where the validity of teacher judgment and that of CE receipt in the previous year are nearly equal, and in grade 1 for math where previous receipt of CE correlates slightly higher with selection than does teacher judgment. The relatively smaller correlations of achievement percentile score and the proxy of family economic measure with the selection status may be partially due to the continuous nature of these two variables. Teacher judgment, indeed, is an important method recommended for selecting students to receive CE services. It undoubtedly reflects the teachers' knowledge of the students' achievement level, and possibly also other learning-related problems. With teacher judgment partialled out, receipt of CE services in the previous year still explains an appreciable amount of variation in selection status. This indicates a tendency for students to receive CE services in consecutive years. Controlling for both teacher judgment and previous

Table 3-16

Mean Affective Score*, by District Allocation Pattern, and by Reading CE Category

District Allocation Pattern and Reading CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I schools							
Districts receive only Title I funds	Mean	NA	80.59	79.98	76.08	74.64	71.82
	S.D.	NA	22.07	21.10	19.32	19.48	19.61
	N	NA	665	642	488	417	330
Districts 'layer' CE services	Mean	NA	84.42	82.55	80.35	76.65	73.80
	S.D.	NA	19.70	21.00	18.18	19.29	18.11
	N	NA	298	378	245	302	288
Districts 'spread' CE services	Mean	NA	80.70	86.43	80.31	83.81	80.82
	S.D.	NA	21.04	18.77	19.20	18.01	18.09
	N	NA	714	775	744	672	512
Other CE only selectees							
In Title I schools	Mean	NA	80.13	83.11	79.22	78.37	75.40
	S.D.	NA	20.52	21.19	19.08	18.85	19.66
	N	NA	786	689	669	619	688
In Other CE only schools	Mean	NA	80.14	82.44	78.60	77.69	75.14
	S.D.	NA	21.25	20.81	19.32	18.39	18.91
	N	NA	569	544	520	528	530
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	NA	79.98	79.22	77.45	74.50	72.41
	S.D.	NA	20.12	19.99	18.35	18.71	18.74
	N	NA	2146	2027	2095	2184	2195
Districts 'layer' CE services	Mean	NA	82.58	82.20	77.84	77.10	73.51
	S.D.	NA	20.55	18.77	19.32	18.64	18.44
	N	NA	953	950	982	1020	1594
Districts 'spread' CE services	Mean	NA	83.87	84.16	78.98	80.51	76.52
	S.D.	NA	20.65	19.31	19.28	18.79	18.52
	N	NA	2114	2107	2203	2289	1995
Non-CE selectees in Other CE only schools	Mean	NA	80.21	78.76	76.86	75.72	72.79
	S.D.	NA	20.49	18.89	18.28	18.20	17.82
	N	NA	2391	2435	2463	2612	4267
Non-CE selectees in non-CE schools	Mean	NA	80.24	79.01	77.74	77.29	75.77
	S.D.	NA	20.25	20.22	18.87	19.13	19.05
	N	NA	1073	1134	1161	1221	1646

*This score can range from 0 to 112.

Table 3-17

Simple Predictor-Criterion Correlations and Percentages of Variances Reduced by Each Successive Entry of Predictors for Reading and Math CE Selection by Grade

		Grade 1		Grade 2		Grade 3		Grade 4		Grade 5		Grade 6	
	Predictor	r*	% V**	r	% V	r	% V	r	% V	r	% V	r	% V
Reading	Teacher judgment of need for Reading CE	0.41	16.7	0.56	31.3	0.55	30.8	0.51	26.4	0.56	31.7	0.53	28.2
	Previous year's*** Reading CE receipt	0.34	5.0	0.44	4.4	0.48	4.4	0.52	7.9	0.52	5.5	0.53	8.5
	Reading achievement (percentile score)	-0.16	0.4	-0.40	0.3	-0.43	1.0	-0.40	0.6	-0.43	0.5	-0.40	0.7
	Other language spoken in home	0.15	0.4	0.12	<0.1	0.16	0.5	0.14	<0.1	0.19	0.6	0.16	0.5
	Economic status index	-0.25	0.3	-0.25	<0.1	-0.30	0.2	-0.27	<0.1	-0.28	<0.1	-0.30	0.2
	Total percent of variance explained by the model	22.8		36.1		36.8		35.1		38.3		38.0	
Math	Teacher judgment of need for Math CE	0.35	12.4	0.44	19.4	0.42	17.8	0.41	17.0	0.49	23.8	0.42	17.9
	Previous year's*** Math CE receipt	0.39	8.3	0.43	8.0	0.40	5.9	0.43	7.2	0.43	5.2	0.43	7.3
	Other language spoken in home	0.19	1.0	0.16	0.3	0.15	0.6	0.16	0.6	0.16	0.4	0.16	0.7
	Math achievement (percentile score)	-0.16	0.2	-0.24	<0.1	-0.31	0.7	-0.27	0.4	-0.32	0.2	-0.27	0.5
	Economic status index	-0.24	0.3	-0.24	<0.1	-0.24	<0.1	-0.25	0.2	-0.24	<0.1	-0.26	0.4
	Total percent of variance explained by the model	22.2		27.8		25.1		25.6		29.5		26.7	

*r = simple correlation of the predictor with CE selection status of 1976-77 school year.

**% V = percentage of additional variances reduced by entry of the predictor.

***Based on data obtained from the Student Background Checklist in which teachers indicated whether the student received CE in 1975-76. For grade 1, this shows student's CE receipt in Kindergarten.

receipt of CE, the additional contributions of the other three predictors are comparatively small.

To further understand the regression model for the CE selection process, multiple correlations and estimates of standardized regression coefficients are given in Table 3-18. Except for grade 1, multiple correlations of the regression model for predicting reading CE selection reach a magnitude of around 0.60, indicating that about 36 percent of the variance in selection status are explainable by the five student characteristics. Multiple correlations for predicting math CE selection are slightly lower, ranging from 0.47 to 0.54. Examining the standardized regression weights, we find that need for CE as judged by the teacher, previous receipt of CE, lower achievement score, other language spoken in home, and lower family economic status tend to increase the probability of being selected for CE services. All these directions of prediction conform to common expectations. The weights applied to the last three predictors are generally small, compared with those for the first two predictors.

Since considerable between-school variations in selection procedures are expected – and have not been removed in the present analyses – the results obtained here suggest that the regression models are satisfactory for the prediction of CE selection. In particular, teacher judgment of need for CE services and knowledge of receipt of CE in the previous year are useful predictors.

Patterns of Concentration of CE Services Over Grade Levels

This section describes variations in CE services over grades. All the analyses were performed at the student level. Five aspects of CE services are examined: (1) the percentage of low-achieving students selected for CE services, (2) class size and class composition for CE selectees, (3) amount of instruction offered to and the services received by CE selectees, (4) the effects of expenditure level on the amount of instruction offered and services received, and (5) students' receipt of non-instructional CE services.

Percentage of Low-Achieving Students Selected for CE Services. The first analysis deals with the question of whether the percentage of low-achieving students selected to receive CE services varies over grades. Low-achieving students were defined as those who scored at or below the 33rd percentile in achievement. Only low-achieving students attending schools that receive CE funds were included in the analysis. Table 3-19 shows that the percentage of reading low-achieving students selected for reading CE services is lowest in grades 1 and 6, and peaks in the third grade. This trend also holds for mathematics. It is of interest to note that the percentages of low-achieving students selected for CE services are uniformly higher for reading than for math across all grades. Within reading or math, these percentages do not vary much across grades, particularly for grades 2 to 5.

Class Size and Class Composition. For this analysis class size was obtained from reading and math teachers who indicated the typical number of students in their classes. The information was then linked to each CE selectee associated with the teacher. Class composition was defined as the percentage of students who are selected for CE services in each CE selectee's class. Thus, a selectee with a score of 25 would be in a class where 25 percent of his/her classmates are CE selectees and 75 percent are not.

Table 3-18

Standardized Regression Weights and Multiple-Correlation Coefficients for the Prediction of Student Selection for CE Services

Predictor	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
			Reading			
Teacher judgment of reading CE need	0.29	0.41	0.34	0.28	0.34	0.30
Previous year's reading CE receipt*	0.23	0.23	0.24	0.32	0.27	0.32
Reading achievement percentile score	-0.05	-0.07	-0.09	-0.08	-0.08	-0.07
Other language spoken in home	0.05	0.01	0.06	0.02	0.08	0.06
Economic status	-0.06	<0.01	-0.05	-0.03	<0.01	-0.05
R	0.48	0.60	0.61	0.59	0.62	0.62
N	11,256	9,918	9,946	9,680	9,925	11,932
			Math			
Teacher judgment of math CE need	0.21	0.30	0.25	0.23	0.33	0.25
Previous year's math CE receipt*	0.29	0.30	0.26	0.28	0.25	0.28
Other language spoken in home	0.09	0.05	0.06	0.06	0.06	0.06
Math achievement percentile score	-0.03	-0.02	-0.09	-0.06	-0.04	-0.06
Economic status	-0.06	-0.03	-0.03	-0.06	-0.01	-0.07
R	0.47	0.53	0.50	0.51	0.54	0.52
N	9,197	7,993	7,996	7,639	7,916	9,912

*Based on data obtained from the Student Background Checklist in which teachers indicated whether the student received CE in 1975-76. For grade 1, this shows student CE receipt in Kindergarten.

Table 3-19

Percentage of Low-Achieving Students in CE Schools Who are Selected for CE Services

	Percentage of Low-Achieving Students Receiving Services			
	Reading		Math	
Grade	Percent Selected	Number of Low-Achieving Students in CE Schools	Percent Selected	Number of Low-Achieving Students in CE Schools
1	29.54	4,652	20.60	4,679
2	49.61	3,967	25.15	3,853
3	52.35	3,847	29.98	4,046
4	46.24	3,759	27.69	3,947
5	45.75	4,055	27.80	3,985
6	39.03	4,376	22.81	4,691

Table 3-20 presents the mean class size and class composition for reading and math at each grade level. As may be seen, class size tends to increase with grades, while the percentage of CE selectees in the class tends to remain fairly stable over grades. There is a slight tendency for CE class composition to peak in the 1st grade for reading, and in the 1st and 2nd grades for math.

By comparing class sizes for CE students and non-CE students, we can identify whether there are any differences between the two groups in grade trends. Table 3-21 presents the mean class sizes for CE and for non-CE students at each grade level. In addition, it presents a ratio obtained by dividing the mean class size for CE students by the mean class size for non-CE students. This ratio indicates that, for reading, the class size for CE students does not increase as rapidly across grades as does the class size for non-CE students. Thus, in grades 1, 2, and 3, the mean class size for CE students is about 96 percent of the class size for non-CE students, whereas this ratio drops to about 92 percent for grades 4, 5, and 6. There is no similar trend, however, for math class size.

Amount of Instruction Offered and Services Profiles. The data for this analysis were obtained from the Student Participation and Attendance Records. Amount of instruction offered was measured as the total number of hours of reading (or math) instruction available to each CE selectee for the entire school year, while the service-profile items reflect the number of hours the selectee attended each kind of instruction during the year.

Looking first at hours of instruction offered, the results indicate that grade level accounts for 13 percent of the variance in reading hours and 4 percent of the variance in math hours. The mean hours of instruction offered in reading and math for each grade are presented in Table 3-22. It is evident that reading instruction offered decreases steadily with increasing

Table 3-20

Mean Class Size and Percentage of Students in Class Who are CE Selectees (Calculated for CE Students Only)

Grade	Class Size for CE Selectees			Percentage of Students in Class Who are CE Selectees		
	Mean	S.D.	N	Mean	S.D.	N
			Reading			
1	17.43	9.13	3,143	48.31	32.25	3,199
2	17.64	9.72	3,322	44.28	32.18	3,378
3	19.24	9.73	3,202	44.42	31.65	3,308
4	20.60	9.43	2,758	45.55	32.99	2,867
5	20.68	9.46	2,529	44.54	32.72	2,742
6	22.40	8.95	2,147	45.89	34.09	2,521
			Math			
1	21.59	7.92	2,048	53.78	34.78	2,094
2	23.18	8.18	1,809	53.75	35.24	1,902
3	23.40	8.22	1,901	48.80	35.43	2,031
4	24.13	8.22	1,796	48.80	37.17	1,966
5	24.40	8.71	1,704	47.83	36.87	1,855
6	25.31	8.04	1,650	51.69	38.31	1,786

grade, while for math it increases to grade 4 and then decreases. However, this is not the whole picture. In Table 3-22, the two columns labeled 'ratio' present the mean hours offered for CE students divided by the estimated mean hours for the total population (taken from Table 1-8), expressed as a percentage. These ratios indicate that for grades 3 through 6, the CE students are offered, on the average, more instruction in reading and math than the population of those grades as a whole. Thus, although the number of hours of instruction offered to CE students declines across grades, in grades 3 through 6, CE students are offered more instruction than the populations as a whole.

Turning to the service profile items, it will be recalled that the major differences between CE selectees and non-selectees, in terms of service received, were in the amounts of special teacher and small group instruction (see Table 3-3). Thus, this discussion will focus on those items. Table 3-23 presents mean number of hours of instruction attended, and Table 3-24 gives the ratios of means for CE selectees divided by projected means for the entire population taken from Table 1-8.

Instruction by a regular teacher in small groups of 1 to 6 students: this activity, for reading only, shows a decrease across grades in terms of number of hours attended by CE selectees (Table 3-23). However, no such trend is evident for math. Further, the ratio of hours for CE

Table 3-21

Mean Class Size for CE Selectees and Non-Selectees

	CE Selectees		Non-Selectees		Ratio of CE to Non-CE
Grade	Mean	N	Mean	N	(%)
			Reading		
1	17.43	3,143	18.05	11,352	96.6
2	17.64	3,322	18.32	9,568	96.3
3	19.24	3,202	19.99	9,396	96.2
4	20.60	2,758	22.25	9,455	92.6
5	20.68	2,529	22.51	9,787	91.9
6	22.40	2,147	24.31	11,349	92.1
			Math		
1	21.59	2,048	23.50	12,115	91.9
2	23.18	1,809	24.03	10,736	96.5
3	23.40	1,901	24.89	10,537	94.0
4	24.13	1,796	25.50	9,898	94.6
5	24.40	1,704	25.37	10,205	96.2
6	25.31	1,650	26.53	11,924	95.4

Table 3-22

Number of Hours of Instruction Offered in Reading and Math, Summed for the Total School Year; for CE Students Only

	Reading				Math			
Grade	Mean	S.D.	N	Ratio CE/Total* Population	Mean	S.D.	N	Ratio CE/Total* Population
1	320.00	106.00	3,113	99.5	176.15	58.16	2,027	99.4
2	298.54	103.68	3,306	98.3	181.37	51.85	1,843	101.4
3	277.72	91.50	3,210	113.0	201.53	58.75	1,957	115.4
4	250.69	80.90	2,817	119.1	204.01	66.04	1,932	115.6
5	233.70	75.92	2,679	116.4	197.91	57.71	1,810	112.3
6	219.53	76.45	2,478	116.0	182.48	48.35	1,757	106.0

*Total population figures taken from Table 1-8.

Table 3-23

Mean Hours per Year for Each of the Reading and Math Services Profile Items by Grade; for CE Students Only

	Reading Services											
	Grade 1 (N=3,113)		Grade 2 (N=3,306)		Grade 3 (N=3,210)		Grade 4 (N=2,817)		Grade 5 (N=2,679)		Grade 6 (N=2,478)	
Profile Item	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Classroom teacher, 21+ students	36.94	57.02	28.10	51.43	31.39	54.59	31.40	52.14	36.37	56.16	29.56	45.51
Classroom teacher, 14-20 students	11.82	37.50	10.33	35.14	10.78	30.69	13.48	34.57	13.21	32.54	13.12	32.42
Classroom teacher, 7-13 students	55.39	58.87	60.85	61.20	47.90	55.16	42.48	52.00	36.72	45.95	33.80	49.16
Classroom teacher, 1-6 students	46.61	53.89	39.73	54.17	34.64	43.46	27.36	39.70	21.68	33.41	22.39	34.01
Special teacher, 7 or more students	11.24	29.64	13.12	29.48	14.38	30.52	11.31	27.18	12.26	31.03	17.61	39.57
Special teacher, 1-6 students	20.42	37.52	25.51	40.51	23.56	37.57	23.71	34.59	20.14	34.86	18.77	33.99
Aide or assistant, 1-10 students	24.82	36.04	19.19	30.76	20.76	31.23	14.67	25.77	14.80	27.61	11.68	25.91
Tutor or volunteer, individual	3.28	10.14	2.22	8.32	1.86	6.64	1.49	6.67	1.74	6.01	1.66	5.91
Ind. work, programmed material	8.23	25.27	8.32	24.57	7.75	20.81	8.97	22.34	10.14	22.83	11.13	22.36
Ind. work, non-programmed material	75.48	55.10	71.81	54.80	65.69	48.90	59.14	46.34	50.08	42.27	45.17	37.21

	Math Services											
Profile Item	Grade 1 (N=2,027)		Grade 2 (N=1,843)		Grade 3 (N=1,957)		Grade 4 (N=1,932)		Grade 5 (N=1,810)		Grade 6 (N=1,757)	
Classroom teacher, 21+ students	41.43	45.98	43.36	47.46	54.78	57.55	54.62	53.59	51.06	56.50	38.45	47.12
Classroom teacher, 14-20 students	14.10	34.06	13.62	30.49	11.71	24.49	12.91	30.58	10.08	26.32	14.66	32.09
Classroom teacher, 7-13 students	17.09	27.34	16.79	28.69	18.92	31.63	17.59	36.22	21.21	37.52	17.79	34.74
Classroom teacher, 1-6 students	14.14	21.38	10.84	20.86	13.79	21.50	15.88	29.51	16.57	25.89	19.04	27.04
Special teacher, 7 or more students	6.86	19.57	6.06	16.81	8.21	19.65	5.78	15.44	10.25	25.15	9.33	25.96
Special teacher, 1-6 students	3.86	12.32	6.73	23.60	8.91	19.39	11.93	24.47	12.63	28.98	9.49	23.15
Aide or assistant, 1-10 students	15.85	22.13	16.32	22.56	16.55	22.83	10.13	18.44	11.13	22.45	9.10	18.04
Tutor or volunteer, individual	1.63	5.41	1.44	4.51	1.35	4.55	1.08	4.39	1.48	5.01	1.87	6.02
Ind. work, programmed material	2.05	7.49	4.69	14.45	4.10	14.43	7.89	23.01	8.03	19.52	9.31	22.93
Ind. work, non-programmed material	44.25	29.64	49.20	27.21	49.00	33.14	52.08	35.83	41.59	33.41	40.33	32.48

Table 3-24

Ratio of Mean Number of Hours for CE Selectees Divided by Number of Hours for Total Population, for Each Profile Item by Grade

	Grade					
Reading Profile Item	1	2	3	4	5	6
Classroom teacher, 21+ students	82.3	79.8	76.0	82.6	81.4	73.7
Classroom teacher, 14-20 students	98.5	71.7	73.8	72.1	85.2	75.4
Classroom teacher, 7-13 students	67.7	85.7	103.9	104.9	120.4	128.0
Classroom teacher, 1-6 students	122.7	104.0	134.3	137.5	117.8	120.4
Special teacher, 7 or more students	362.6	298.2	319.6	282.8	322.6	352.2
Special teacher, 1-6 students	346.1	311.1	327.2	359.2	387.3	536.3
Aide or assistant, 1-10 students	200.2	218.1	220.9	276.8	361.0	365.0
Tutor or volunteer, individual	91.1	92.5	93.0	149.0	145.0	184.4
Ind. work, programmed material	105.5	54.7	99.4	99.7	90.5	101.2
Ind. work, non-programmed material	81.9	79.8	89.5	105.6	90.1	86.5

	Grade					
Math Profile Item	1	2	3	4	5	6
Classroom teacher, 21+ students	69.3	75.1	84.5	84.7	81.7	59.8
Classroom teacher, 14-20 students	94.0	90.2	106.5	86.1	84.7	92.2
Classroom teacher, 7-13 students	130.5	136.5	151.4	143.0	127.8	117.8
Classroom teacher, 1-6 students	142.8	82.1	142.2	116.8	111.2	154.8
Special teacher, 7 or more students	980.0	466.2	456.1	206.4	277.0	345.6
Special teacher, 1-6 students	551.4	373.9	387.4	441.9	435.5	790.8
Aide or assistant, 1-10 students	317.0	333.1	337.8	337.7	412.2	455.0
Tutor or volunteer, individual	148.2	120.0	150.0	135.0	164.4	187.0
Ind. work, programmed material	128.1	109.1	107.9	157.8	136.1	194.0
Ind. work, non-programmed material	74.5	85.9	91.1	109.6	92.2	93.8

selectees compared with the total population (Table 3-24) shows no trends across grades for either reading or math.

Instruction by a special teacher in small groups of 1 to 6 students: for this item, a trend in mean hours attended is evident in math only (Table 3-23), indicating an increase in mean hours until grade 5 and then a decrease in grade 6. However, there are no grade trends for this item in either reading or math when one compares the ratio of mean hours for CE students with mean hours for the population (Table 3-24).

Assistance by a paid aide in groups of 1 to 10 students: in reading, this item shows a decrease in mean hours for CE students in the higher grades, while in math there is an increase in the lower grades followed by a decrease (Table 3-23). However, the ratios of means (Table 3-24) tell a slightly different story: for both reading and math, the ratio increases with grade level.

Thus, it appears that the only consistent grade trend in terms of services received is that CE students receive an increasing amount of assistance by a paid aide in small groups, relative to the entire population, at least through grade 5.

Description of Instructional Services by Expenditure Level. To further explore the relationship between grade level and hours of instruction offered, the CE selectees were divided into four groups as follows: (1) selectees with high prorated CE expenditures in schools with high regular per-pupil expenditures, (2) selectees with high prorated CE expenditures in schools with low regular per-pupil expenditures, (3) selectees with low prorated CE expenditures in schools with high regular per-pupil expenditure, and (4) selectees with low prorated CE expenditures in schools with low regular per-pupil expenditures.

We then computed, for each of the groups, the mean total hours of instruction offered, and the mean hours of instruction attended for each of the service profile items. These data are presented in Tables 3-25, 3-26, and 3-27, and serve as a supplement to the information presented in the previous section.

With respect to total hours of reading instructional services, the 1st, 2nd, and 3rd grades with high prorated CE expenditures in schools with low regular expenditures are offered more hours per year than are students in the other three expenditure categories. In grades 5 and 6, students with high prorated CE expenditures are offered more hours for both levels of schools' regular expenditure, while the difference among expenditure categories is small in grade 4. The picture for total math hours are slightly different. For grades 1 through 4, there are no systematic differences among the four groups of CE students. But in grades 5 and 6, students with high prorated CE expenditures in schools with low regular expenditures have an advantage of being offered more hours of math instruction than the other three groups of CE selectees. Thus, there are some effects of expenditure categories on the amount of services provided to the students. These effects are further shown in receipt of instruction from special teachers, and assistance by aides.

For the two profile items involving special teachers, the results of two-way ANOVA's (grade by expenditure category) indicate that, controlling for grades, the expenditure category accounts for 6 to 9 percent of the variances in hours of reading/math instruction received

Table 3-25

Mean Number of Hours of Service Offered per Year in Reading and Math by Grade and by Expenditure Level (for CE Selectees Only)

	Mean Total Hours Offered — Reading											
	High CE-High Reg.			High CE-Low Reg.			Low CE-High Reg.			Low CE-Low Reg.		
Grade	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
1	473	319.39	121.37	492	371.08	103.57	654	339.90	96.57	1003	282.72	92.94
2	462	286.18	97.19	701	334.55	107.10	690	312.35	111.38	985	268.34	94.38
3	471	287.31	92.29	618	294.89	85.62	564	289.07	94.73	1077	263.64	92.31
4	463	248.78	79.30	489	255.93	93.41	627	265.75	84.93	866	245.27	75.69
5	421	253.58	82.74	414	250.94	69.95	601	244.25	88.27	774	214.89	55.26
6	321	266.20	96.88	471	250.97	72.87	518	183.44	74.25	785	215.23	54.80
	Mean Total Hours Offered — Math											
1	180	146.55	60.11	275	198.45	71.36	195	170.23	32.43	594	197.02	50.52
2	161	182.40	35.35	233	214.56	69.32	133	206.49	72.41	645	184.46	42.88
3	168	192.86	62.48	387	212.36	59.08	201	210.46	80.25	559	211.48	62.71
4	233	195.21	61.06	286	209.91	60.81	289	212.19	68.84	561	211.19	78.66
5	195	204.75	58.96	262	226.99	56.61	274	211.15	83.81	458	205.14	42.14
6	186	195.67	41.54	257	221.29	71.61	224	157.69	31.66	456	196.65	36.36

Table 3-26

Reading Services Profiles by Grade for CE Selectees with Various Levels of Expenditures

Per-Pupil Expenditures	Grade	N	Classroom Teacher								Special Teacher				Aide or Assistant, 1-10 Students		Tutor or Volunteer, Individual		Independent Work			
			21+ Students		14-20 Students		7-13 Students		1-6 Students		7 or More Students		1-6 Students						Programmed Materials		Non-Programmed Materials	
			Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
High CE and High Regular	1	473	34.25	47.81	19.82	70.14	47.22	54.37	49.18	49.93	13.70	38.21	33.73	43.88	14.50	31.46	2.63	7.60	6.28	17.98	77.12	63.82
	2	462	16.87	32.43	5.39	26.05	46.07	53.27	63.89	68.44	11.99	28.06	34.88	33.28	13.78	27.76	1.21	5.27	8.47	22.52	67.65	47.75
	3	471	22.27	41.93	7.54	23.60	50.01	52.51	40.74	42.00	23.81	39.24	29.67	33.55	19.07	31.06	1.08	4.35	4.04	14.40	70.31	45.22
	4	463	27.73	50.14	11.26	33.61	33.78	47.15	36.03	46.28	7.32	16.91	34.84	36.47	15.46	29.09	0.50	2.29	7.77	23.48	56.05	44.71
	5	421	46.94	75.94	8.87	22.98	32.57	41.22	21.73	36.27	14.38	28.46	23.06	32.78	19.81	36.28	1.38	5.30	21.65	38.20	44.00	47.86
	6	321	39.69	61.43	8.04	21.40	29.66	47.04	31.25	39.76	12.74	25.55	23.34	31.84	25.89	49.18	1.06	4.46	23.03	36.22	53.52	43.71
High CE and Low Regular	1	492	44.15	64.20	12.69	30.46	72.28	59.83	36.80	52.75	31.34	41.80	29.07	45.63	14.91	26.10	1.60	7.05	11.75	35.62	82.84	55.20
	2	701	53.35	65.02	18.73	49.13	57.03	58.39	32.70	47.52	24.95	35.11	33.59	48.70	13.21	26.75	1.10	5.16	4.80	14.59	70.66	59.29
	3	618	44.91	59.22	17.35	35.01	47.92	57.34	27.94	43.18	22.36	31.75	32.14	39.40	18.32	29.29	1.78	6.81	5.58	13.84	57.14	48.90
	4	489	44.71	62.23	17.87	38.28	39.10	50.94	19.69	34.87	25.97	37.20	13.04	28.38	12.49	22.37	1.62	7.35	10.47	22.33	49.21	34.06
	5	414	35.57	51.52	22.45	43.94	28.02	42.65	25.74	39.78	16.79	35.02	36.39	48.27	12.56	25.03	1.20	5.27	8.96	21.95	44.78	34.69
	6	471	25.83	43.65	16.31	38.86	47.64	64.59	24.65	34.48	30.01	47.52	25.74	36.95	8.18	16.03	2.32	8.66	6.70	15.51	45.58	35.17
Low CE and High Regular	1	654	52.04	67.33	12.46	30.96	57.90	67.78	44.94	53.86	1.35	7.60	12.79	30.15	22.42	37.21	5.02	12.66	11.03	29.93	89.68	61.18
	2	690	30.21	56.34	14.19	47.48	68.23	69.15	40.17	55.78	5.78	21.08	18.97	33.02	17.42	33.50	4.35	12.92	6.46	21.90	85.84	62.16
	3	564	32.07	49.48	11.03	35.96	58.69	57.48	34.76	48.31	4.09	14.24	17.03	29.95	14.27	30.44	2.03	6.03	6.83	25.96	88.17	62.17
	4	627	25.20	44.11	13.27	35.97	54.77	56.52	24.08	38.94	9.30	25.33	16.44	25.91	15.31	27.44	1.46	6.71	11.71	28.51	75.66	56.15
	5	601	47.33	56.67	15.05	32.10	43.05	49.65	18.41	31.59	8.00	23.03	12.79	23.79	16.35	30.35	1.12	4.58	10.79	21.64	54.56	45.38
	6	518	34.03	39.82	17.86	36.14	25.16	36.33	27.09	35.86	9.82	31.91	9.96	26.16	8.02	16.37	1.89	5.67	7.36	18.85	30.65	32.18
Low CE and Low Regular	1	1003	27.53	49.03	9.58	25.96	44.68	48.35	50.37	49.12	6.98	23.41	13.22	27.25	37.13	38.51	2.68	9.40	6.34	16.57	60.00	43.05
	2	985	18.48	43.48	5.60	14.76	58.66	54.56	34.49	48.56	13.85	32.08	16.10	31.16	28.65	32.82	2.53	8.22	13.60	31.20	57.54	42.62
	3	1077	30.80	60.84	8.32	23.35	41.31	49.41	34.51	38.76	13.95	30.75	14.86	26.39	29.21	33.09	2.38	8.23	11.79	22.44	56.08	38.72
	4	866	33.20	54.50	13.14	32.67	44.08	50.26	29.07	37.79	10.08	27.99	18.35	31.57	19.50	26.34	2.03	7.88	8.06	18.58	51.93	38.09
	5	774	28.66	47.76	9.87	28.13	34.73	46.09	25.63	32.60	17.01	40.03	14.31	29.00	16.62	26.14	3.03	7.78	6.38	14.12	45.01	36.45
	6	785	23.58	42.22	9.44	25.00	34.67	48.90	20.17	32.49	21.61	47.12	17.51	34.73	13.08	23.38	1.90	5.61	12.90	21.65	46.64	37.58

Table 3-27

Math Services Profiles by Grade for CE Selectees with Various Levels of Expenditures

Per-Pupil Expenditures	Grade	N	Classroom Teacher								Special Teacher				Aide or Assistant, 1-10 Students		Tutor or Volunteer, Individual		Independent Work			
			21+ Students		14-20 Students		7-13 Students		1-6 Students		7 or More Students		1-6 Students						Programmed Materials		Non-Programmed Materials	
			Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
High CE and High Regular	1	180	21.42	25.68	6.41	13.99	20.19	25.11	13.87	19.38	13.95	28.77	9.78	18.23	8.56	12.61	2.71	6.98	1.09	4.03	35.05	33.80
	2	161	35.36	43.00	11.33	22.95	11.78	28.36	17.78	26.09	5.42	13.22	9.07	15.24	11.68	28.82	2.46	6.84	3.28	7.27	62.85	37.78
	3	168	50.43	57.60	9.45	21.05	17.20	33.59	12.03	21.70	3.80	7.40	17.95	23.86	11.09	19.66	2.52	8.81	6.66	18.68	50.88	32.14
	4	233	32.65	42.11	19.18	39.42	17.67	29.04	13.78	22.76	11.10	24.90	17.79	26.92	12.48	22.79	0.94	2.98	11.37	34.41	43.14	31.34
	5	195	37.97	51.22	28.83	43.49	22.12	37.63	14.60	22.27	15.94	37.83	13.01	27.12	7.37	13.67	1.79	5.95	9.79	20.14	36.89	27.11
	6	186	40.72	41.38	24.26	42.62	7.74	22.60	17.10	23.70	17.75	40.91	12.80	26.52	9.27	16.13	1.10	4.31	19.19	32.69	30.45	28.46
High CE and Low Regular	1	275	70.03	48.78	12.82	30.74	13.95	27.73	2.98	8.18	29.23	33.76	6.77	15.31	9.41	18.19	0.69	3.50	1.39	8.11	32.08	24.42
	2	233	53.46	54.81	12.09	29.81	17.40	26.47	7.94	13.60	22.46	29.21	22.12	51.70	15.11	20.96	0.71	2.55	1.99	7.36	45.92	34.36
	3	387	79.14	62.62	8.49	21.76	9.48	19.70	10.80	18.76	22.83	29.37	12.31	20.35	14.24	20.43	1.40	3.52	1.78	5.15	35.60	28.96
	4	286	77.38	58.65	15.37	36.88	7.40	17.86	10.29	23.29	13.18	17.56	18.88	27.74	7.85	16.47	1.40	6.53	5.18	13.74	37.50	34.92
	5	262	61.97	57.62	15.32	32.65	20.78	43.40	6.09	12.35	29.10	42.09	33.23	49.03	6.20	20.47	0.29	1.80	1.74	5.35	34.25	33.46
	6	257	55.65	55.64	20.19	48.13	13.43	21.54	11.57	24.84	30.40	41.47	20.72	38.02	11.35	30.38	0.66	4.26	5.19	15.05	30.02	38.26
Low CE and High Regular	1	195	42.89	53.11	16.49	25.55	18.95	40.95	20.31	23.99	0.13	1.79	0.50	4.32	14.31	24.87	1.18	4.38	0.80	3.35	39.41	37.07
	2	133	60.88	69.85	33.97	51.33	1.14	5.47	21.53	40.88	3.92	19.04	3.11	11.50	19.08	28.64	1.20	5.96	1.60	5.49	44.68	34.53
	3	201	42.19	52.41	11.89	23.23	17.59	34.87	23.53	28.90	4.06	11.09	3.82	12.59	28.16	32.31	1.29	3.75	9.39	33.77	54.14	35.31
	4	289	62.11	55.24	5.90	16.46	12.95	33.72	22.29	38.13	2.78	12.92	11.37	16.21	10.91	20.91	2.07	5.17	10.44	32.56	57.21	36.37
	5	274	60.21	66.19	4.96	14.28	28.59	46.31	15.77	26.78	9.77	20.02	8.85	17.79	26.89	36.95	3.26	6.98	10.51	22.32	26.75	26.99
	6	224	27.40	42.19	4.89	20.34	23.21	43.79	24.80	29.22	0.66	3.36	3.84	11.31	12.08	15.36	3.62	6.97	11.40	23.43	38.07	31.06
Low CE and Low Regular	1	594	35.61	38.84	6.99	13.96	23.47	24.21	20.81	25.15	3.24	10.21	2.04	5.74	27.30	25.21	1.41	5.34	3.98	9.12	53.76	28.45
	2	645	39.42	39.66	9.22	15.41	21.29	31.06	10.54	17.78	4.60	11.84	3.61	10.29	22.36	20.80	1.41	4.36	7.82	16.48	49.89	17.81
	3	559	45.09	55.50	11.96	19.68	30.98	37.15	16.24	22.69	8.19	18.92	7.25	14.45	21.77	20.72	1.63	5.13	5.30	10.69	47.07	29.57
	4	561	58.73	56.65	12.07	24.02	15.62	25.34	19.45	32.33	4.31	10.31	5.21	14.38	15.79	19.61	0.78	3.75	12.45	23.95	51.73	32.28
	5	458	50.07	55.16	5.18	19.72	25.91	39.38	24.14	32.76	6.29	13.70	5.93	14.95	15.28	18.86	2.03	5.89	9.32	20.69	47.89	36.11
	6	456	39.14	48.35	17.50	29.06	24.10	43.44	17.25	28.26	4.31	11.30	5.96	13.57	14.93	17.28	3.94	9.01	10.57	19.66	46.59	31.45

from special teachers. Inspections of Tables 3-26 and 3-27 reveal that students with high prorated CE expenditure, particularly those in schools with low regular expenditure, tend to receive appreciably more hours of instruction by special teachers than other CE selectees. On the other hand, CE students with low prorated CE expenditure, on the average, receive more hours of assistance from aides. This tendency applies particularly to those CE selectees attending schools with low regular expenditure. These findings suggest that high prorated CE expenditures are related to the employment of special teachers for instruction, while low CE expenditures relate to the use of aides and assistants for instructional help. On the whole, there are little interaction effects between grade level and expenditure category.

Receipt of Non-Instructional Services. The purpose of this analysis was to determine the percentages of students receiving either guidance and counseling CE services or health and nutrition CE services, and to identify any variation over grade level. Table 3-28 presents, for each grade, the percentages of students receiving the two types of services. As may be seen, the percentages are quite small, and the variations over grades are small.

In summary, the major variations in educational services for CE selectees observed over grade levels are as follows: class size increases with grade level for both reading and math; the amount of reading instruction offered decreases; for math there is an initial increase in instruction offered followed by a decrease; small group and individual instruction decreases as grade increases. Across the grades, student's prorated CE expenditures are appreciably related to the amount of instruction received from special reading and math teachers.

Reasons for Discontinuation of CE Service

For the first part of this analysis, students reported by their teachers as having received CE services during the previous year (1975-76) were cross-classified by teacher judgment of their need for CE services and their CE selection status in the 1976-77 school year. The data are presented by grade level in Table 3-29. It may be seen that about two-thirds of the students receiving CE in 1975-76 were again selected to receive such services in 1976-77. The percentages of CE recipients who are again selected for services in a following year tends to decrease over grades, particularly in the case of math. Over all six grades, 90 percent of the reading CE recipients who continue to be selected for services are judged by their teachers as requiring CE services. For math, the figure drops to 85 percent. At the same time, the teachers judged that 63 percent of the students whose reading CE services were discontinued still require reading CE services. For math, this figure is 65 percent.

The second part of the analysis was based on students who received CE services in 1975-76, but did not receive such services in 1976-77. Here the need for CE (teacher judgment) was cross-tabulated for each grade with the reason for discontinuing the CE services. The results are presented in Table 3-30. Inspection of the table reveals that for relatively large percentages (about or over 40 percent) of discontinued CE students their teachers thought that they were still receiving CE services. This indicates a discrepancy between teachers' knowledge of the students' receipt of CE services and the school coordinator's record of the students' CE selection status as reported in the Compensatory Education Roster (CER). It could be that teachers tend to report students as receiving CE services if they felt that the students were

Table 3-28

Percentages of Students by Grade Who Receive Guidance and Counseling or Health and Nutrition Services as Part of a CE Program

	Type of Service			
	Guidance and Counseling		Health and Nutrition	
Grade	Number of Students Receiving Services	%	Number of Students Receiving Services	%
1	358	2.6	694	5.0
2	411	3.4	730	6.0
3	340	2.8	687	5.7
4	322	2.8	574	5.0
5	258	2.2	544	4.6
6	395	2.8	590	4.2

Table 3-29

Percentages of Students Who Received CE in 1975-76, Classified by Need for CE, and CE Status in 1976-77

		Teacher's Judgment of Need for CE in 1976-77					
		Reading			Math		
Grade	CE Selection for 1976-77	Does not Need CE	Needs CE	Total	Does not Need CE	Needs CE	Total
			N=1,048			N=767	
1	Non-Selectee	13.8%	19.1%	32.9%	14.9%	18.6%	33.5%
	CE-Selectee	10.0%	57.1%	67.1%	13.8%	52.7%	66.5%
			N=1,804			N=840	
2	Non-Selectee	13.3%	17.4%	30.7%	11.5%	20.6%	32.1%
	CE-Selectee	6.0%	63.4%	69.4%	12.5%	55.4%	67.9%
			N=2,378			N=983	
3	Non-Selectee	13.3%	21.3%	34.6%	14.6%	22.7%	37.3%
	CE-Selectee	6.1%	59.3%	65.4%	7.3%	55.3%	62.6%
			N=2,239			N=1100	
4	Non-Selectee	12.0%	23.0%	35.0%	10.6%	27.9%	38.5%
	CE-Selectee	7.6%	57.4%	65.0%	10.4%	51.1%	61.5%
			N=2,186			N=1,166	
5	Non-Selectee	11.3%	24.5%	35.8%	11.2%	30.0%	41.2%
	CE-Selectee	3.7%	60.5%	64.2%	4.8%	53.9%	58.7%
			N=2,054			N=1,198	
6	Non-Selectee	13.1%	24.0%	37.1%	16.9%	28.3%	45.2%
	CE-Selectee	6.8%	56.1%	62.9%	8.8%	46.0%	54.8%

Table 3-30

Percentages of Students Who Received CE Services in 1975-76 but Whose Services were Discontinued in 1976-77, Classified by Need for CE and Reason for Discontinuation of CE Services

Grade	Teacher's Judgment of Need for CE in 1976-77					
	Reading			Math		
Reason for Discontinuation of CE Services	Does Not Need CE	Needs CE	Total	Does Not Need CE	Needs CE	Total
Grade 1						
Student still receives CE	3.0%	47.3%	50.3%	8.9%	42.2%	51.1%
Student no longer qualifies	37.0%	8.5%	45.5%	31.6%	5.1%	36.7%
CE funds cut back	1.2%	1.5%	2.7%	0.4%	3.4%	3.8%
Promoted to grade with no CE	0.9%	0.6%	1.5%	3.8%	4.6%	8.4%
Grade 2						
Student still receives CE	3.4%	40.9%	44.3%	5.1%	47.5%	52.6%
Student no longer qualifies	36.2%	10.2%	46.4%	27.5%	9.3%	36.8%
CE funds cut back	3.8%	3.8%	7.6%	0.8%	5.9%	6.7%
Promoted to grade with no CE	0.4%	1.3%	1.7%	0.8%	3.0%	3.8%
Grade 3						
Student still receives CE	2.4%	37.8%	40.2%	4.4%	41.0%	45.4%
Student no longer qualifies	33.2%	13.2%	46.4%	23.9%	8.3%	32.1%
CE funds cut back	1.2%	7.7%	8.9%	3.8%	7.7%	11.5%
Promoted to grade with no CE	1.0%	3.6%	4.6%	6.5%	4.4%	10.9%
Grade 4						
Student still receives CE	2.6%	35.0%	37.6%	3.7%	44.2%	47.9%
Student no longer qualifies	27.4%	10.2%	37.6%	18.6%	9.2%	27.8%
CE funds cut back	1.3%	8.7%	10.0%	1.7%	12.9%	14.6%
Promoted to grade with no CE	3.3%	11.5%	14.8%	2.2%	7.4%	9.6%
Grade 5						
Student still receives CE	2.3%	38.6%	40.9%	3.5%	42.2%	45.7%
Student no longer qualifies	23.1%	15.0%	38.1%	18.7%	10.8%	29.5%
CE funds cut back	1.1%	4.5%	5.6%	2.9%	10.5%	13.4%
Promoted to grade with no CE	5.0%	10.4%	15.4%	2.4%	9.0%	11.4%
Grade 6						
Student still receives CE	1.8%	39.1%	40.9%	5.6%	33.3%	38.9%
Student no longer qualifies	27.2%	11.7%	38.9%	21.5%	7.5%	29.0%
CE funds cut back	1.5%	7.3%	8.8%	1.9%	6.2%	8.1%
Promoted to grade with no CE	4.4%	6.9%	11.3%	8.3%	15.7%	24.0%

still in need of CE services. This explanation is supported by the fact that an overwhelming majority of those discrepant cases were judged by the teachers to be requiring CE services.

Where the teacher's knowledge and the CER record are consistent, the data indicate that most of the CE-discontinued students were judged as not needing CE services and were not receiving services because they no longer qualify. There were few CE recipients whose services were later discontinued because of funding cutbacks. The percentage of students whose CE services were discontinued because of being promoted to a grade which has no CE programs are slightly larger, for grades 4 to 6 in particular. Further examination of the table shows that an appreciable percentage of students whose CE services were discontinued because they no longer qualify were judged by their teachers as requiring such services. This could be due to the fact that, with limited funds, schools do not consider all students judged by their teachers as needing CE to be qualified for such services. Indeed, teacher judgment of need for CE services is but one of the selection criteria that schools employ. Thus students may have just achieved at a level which disqualifies them for CE services but their teachers still regarded them as requiring the services. These findings apply to both reading and math.

Delivery of Title I Services to Students in Non-Public Schools

Tables 3-31, 3-32, and 3-33 present the frequency distributions of Title I district services to students in non-public schools with respect to the site at which the services are delivered, the type of instructional services delivered, and the time during which the Title I CE services are delivered. Of the 219 districts in the Representative Sample, 214 participate in Title I. Among these Title I districts, 101 indicated expenditures for Title I services to their non-public school students, but 114 responded to items concerning such services. Inspections of these data reveal some discrepancies between information obtained from these two different sources. In an effort to resolve such inconsistencies of data, the analyses were based on data obtained from 98 Title I districts that reported both the delivery of Title I services to the districts's non-public school students and the expenditure for such services.

Table 3-31

Site of District Delivery of Title I Services to Students Attending Non-Public Schools (Based on 98 Title I Districts)

Delivery of Service	Frequency of Use	
	Number of Districts	Percentage of Districts
At non-public school	89	90.8%
Public elementary school	10	10.2%
Mobile facility	3	3.1%
Site other than school including community center	3	3.1%

Table 3-32

Instructional Services Provided to Students in Non-Public Schools (Based on 98 Title I Districts)

Instructional Service	Frequency of Service	
	Number of Districts	Percentage of Districts
Reading	97	99.0%
Mathematics	67	68.4%
Parent involvement	53	54.1%
Health services	20	20.4%
Counseling services	20	20.4%
Other basic skills	15	15.3%
Intergroup relations	7	7.1%
Nutritional services	2	2.0%

Table 3-33

Time During Which Districts Provide Title I Services to Students in Non-Public Schools (Based on 98 Title I Districts)

Time Period	Frequency of Instructional Time Periods	
	Number of Districts	Percentage of Districts
Normal school hours	92	93.9%
During summers	15	15.3%
After normal school hours	8	8.2%
Before normal school hours	4	4.1%
During weekends	2	2.0%

Table 3-31 reveals that the overwhelming majority (90.8 percent) of the districts deliver Title I services at the non-public school itself. Very few districts indicated the use of other sites or facilities to provide Title I services to non-public school students. Table 3-32 shows that the servcies most likely to be delivered are reading and math services, with virtually all of the districts (99 percent) providing reading and approximately two-thirds of the districts providing math services (68.4 percent). In addition, counseling and health services were also provided to non-public school students in about one-fifth of the 98 districts. Inspection of Table 3-33 shows that most of the districts (93.9 percent) delivered these services during the normal school hours. Approximately 15 percent of the districts reported that Title I services are provided to non-public school students during the summer months. Few districts offer Title I services outside the normal school day (before or after school or during weekends).

CHAPTER 4. RECEIPT OF SERVICES IN REGULAR AND COMPENSATORY SERVICES

Having taken a look at who recieves compensatory services, we now turn to the services themselves in order to describe what those services are and how they are distributed among the students in our sample. The chapter is divided into four sections: in the first three sections the focus is on the six groups of students (Title I Students in Title I Schools Other CE-Students in Title I Schools, Other-CE Students in Other-CE Schools, Non-CE Students in Non-CE Schools). The first two sections present an overview of the amount of services received in both reading and math, and the third section provides a detailed description of the types of services received by the students. Finally, in the fourth section, we examine the distribution of services across grades.

All of the analyses presented in this chapter were performed at the student level, utilizing either student-level data or teacher-level data extended to the students.

Group Size and Instructors of Basic-Skill Services

Three aspects of educational services are examined here: (1) the total amount of exposure to instruction, (2) the overall class size, and (3) the types of staff and the sizes of instructional groups. The first and third of these were obtained from the Student Participation and Attendance Records, collected at the student level, while class size was obtained from the Teacher Questionnaire and extended to the students.

Amount of Exposure to Instruction. The first comparison is on the total number of hours of reading or math instruction that the student receives during the school year. The mean number of hours for each of the six groups of students, by grade, is presented in Table 4-1 for reading and math. The results of the ANOVAs indicate that, for reading in grades 4, 5, and 6, the student selection category accounts for 6.4 percent, 4.5 percent, and 5.9 percent, respectively, of the variance in hours of exposure. These differences are shown in Table 4-1, where it may be seen that the three CE groups receive more hours per year of reading instruction than do their non-CE peers. Of the CE students, Title I students have the highest mean number of hours of reading instruction.

A similar pattern exists for exposure to math instruction in grades 3, 4, and 5, where the student selection category accounts for 3.4 percent, 4.2 percent, and 5.3 percent of the variance, respectively. Again CE students in general, and Title I students in particular, receive more hours of math instruction than their non-CE peers. There are, however, no clear distinctions in total reading or math hours between CE and non-CE students in the early grades.

Class Size. Table 4-2 presents the mean class sizes for each of the six groups of students. For reading, non-selectees in Other CE and non-CE schools tend to be associated with slightly larger classes in grades 4, 5, and 6. The differences in size of reading classes are small among the six groups of students in the lower three grades. For math classes, the differences are mostly insubstantial.

Table 4-1

Number of Hours of Reading and Math Instruction Attended per Year

	Title I Students in Title I Schools			Other-CE Students in Title I Schools			Other-CE Students in Other-CE Schools			Non-CE Students in Title I Schools			Non-CE Students in Other-CE Schools			Non-CE Students in Non-CE Schools		
Grade	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
Hours of Reading Attended Per Year																		
1	301.98	99.41	1,708	293.40	110.23	843	277.23	84.86	562	298.49	98.19	6,758	306.66	91.37	2,887	288.11	102.97	1,296
2	282.17	95.94	1,836	279.59	106.45	861	270.82	95.93	609	282.29	99.38	5,602	292.53	85.17	2,511	257.01	95.36	1,131
3	257.12	87.08	1,915	262.06	83.09	740	262.00	92.95	555	236.53	83.79	5,440	240.07	83.53	2,610	225.96	82.01	1,201
4	244.12	83.00	1,575	218.07	66.10	713	227.35	62.08	529	196.21	65.47	5,544	202.02	51.94	2,569	193.69	46.63	1,207
5	222.00	76.21	1,470	211.33	73.39	657	213.48	55.21	552	187.77	65.23	5,684	184.76	42.57	2,684	184.04	47.37	1,280
6	220.75	75.55	1,172	187.74	66.52	750	195.14	62.53	556	167.25	54.76	6,075	170.70	57.77	4,407	168.73	66.25	1,689
Hours of Math Attended Per Year																		
1	175.55	61.09	902	141.51	39.45	760	167.77	47.14	365	162.95	62.27	7,647	156.70	52.63	3,087	159.84	59.53	1,296
2	182.27	55.66	889	149.89	40.36	646	171.53	32.49	308	167.11	50.35	6,762	156.33	40.73	2,811	164.85	56.21	1,131
3	192.28	56.24	1,010	171.27	37.37	567	198.76	68.65	380	170.58	44.92	6,517	164.41	31.46	2,786	167.34	51.34	1,201
4	195.71	69.90	917	183.75	48.79	632	187.86	54.86	363	168.64	44.45	6,262	162.25	25.53	2,734	172.10	39.22	1,205
5	203.49	64.72	845	161.42	42.94	550	174.74	30.96	415	171.12	47.64	6,414	159.89	25.68	2,819	169.07	36.27	1,281
6	182.14	53.59	671	155.87	31.33	652	170.41	34.09	434	161.28	35.59	6,669	160.29	43.86	4,530	162.17	46.66	1,689

Table 4-2

Class Sizes for Reading and Math Classes

	Title I Students in Title I Schools			Other-CE Students in Title I Schools			Other-CE Students in Other-CE Schools			Non-CE Students in Title I Schools			Non-CE Students in Other-CE Schools			Non-CE Students in Non-CE Schools		
Grade	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
Class Size – Reading																		
1	17.53	9.08	1,720	16.91	8.84	861	17.90	9.71	562	17.61	9.32	7,071	18.05	9.32	2,935	20.35	9.38	1,346
2	16.70	9.44	1,845	19.54	9.71	857	17.81	10.16	620	18.29	9.06	5,802	19.24	8.78	2,578	16.48	9.27	1,188
3	19.13	9.44	1,900	17.96	9.66	743	21.29	10.44	559	19.23	9.05	5,576	20.19	8.99	2,571	22.97	9.09	1,249
4	20.19	9.42	1,560	21.25	9.24	673	20.96	9.69	525	20.85	8.85	5,707	24.24	8.27	2,568	24.72	7.81	1,180
5	20.28	9.30	1,420	20.15	10.18	564	22.25	8.92	545	21.33	8.78	5,740	23.91	7.97	2,733	24.76	8.00	1,314
6	22.70	8.80	1,121	21.10	9.04	537	23.14	9.06	489	23.02	8.01	5,569	25.97	7.21	4,098	24.51	7.07	1,682
Class Size – Math																		
1	21.75	8.08	910	21.80	7.55	774	20.73	8.25	364	23.11	6.73	7,807	23.98	6.13	2,970	24.68	6.55	1,338
2	23.69	7.72	901	23.72	8.15	625	20.37	9.08	283	23.88	6.21	6,903	24.59	5.78	2,679	23.64	6.77	1,154
3	24.46	7.81	983	20.82	8.87	551	24.41	7.37	367	24.84	6.12	6,616	24.90	5.80	2,693	25.14	6.92	1,228
4	23.56	8.01	847	23.83	8.09	616	26.11	8.73	333	25.11	6.35	6,144	25.98	5.72	2,560	26.46	5.62	1,194
5	23.75	8.59	828	24.58	8.18	480	25.54	9.43	396	25.08	6.44	6,103	25.30	5.72	2,865	26.99	6.24	1,237
6	25.36	8.13	620	25.65	5.19	656	24.62	11.31	374	25.91	6.38	6,085	27.68	6.85	4,200	25.88	5.87	1,639

Staffing and Instructional Groups. The variables investigated here are the ten service profile items from the Student Participation and Attendance Records. These items indicate for various combinations of staff (classroom teachers, special teachers, and aides) and group sizes (1-6 students, 7-13 students, 14-20 students, more than 20 students), the amount of instructional time each student receives during the school year. Tables 4-3 through 4-8 present the means for these items for reading, and Tables 4-9 through 4-14 present the means for math. Only three of the services show substantial differences among the six categories of students: instruction by a special reading/math teacher in a group of seven or more students, instruction by a special reading/math teacher individually or in a group of 2 to 6 students, assistance by a paid aide or paid teaching assistant, individually or in a group of 2 to 10 students. The pattern of the means is consistent for both reading and math across grades: CE students receive far more individual or small-group instruction from special teachers and aides than do their non-CE peers. Of the three categories of CE selectees, Title I students generally have the highest means on these three variables, while typically Other CE students in Title I schools have the lowest means. It should be noted that the standard deviations for these items are all large, due to skewed distributions. This results from the fact that many of the items are, to some degree, mutually exclusive. That is, if a student receives much large-group instruction, he will probably receive little small-group instruction. Thus, on any given item, some students will have scores near zero, while others will have fairly large scores.

In summary, average class size does not differ substantially among the six categories of students. However, there are differences in total amount of exposure to instruction, with CE students in general and Title I students in particular receiving more hours of instruction than their non-CE peers at the upper grade levels. This advantage for CE students cannot be confirmed at the earlier grades. Additionally, CE students receive much more individual or small-group instruction from special teachers and aides than do non-CE students. Among CE students, Title I students tend to receive the most such instruction, while other CE students in Title I schools tend to receive the least.

Weekly Hours of Instructional Activities in Reading and Mathematics

In the previous section, we looked at total exposure to instruction for the entire year. In this section, we look specifically at the amount of instruction per week, which may help us to attain a better perspective. Table 4-15 presents the mean number of hours per week of reading and math instruction offered for each of the student selection categories. As may be seen, the means range from 5 to 9 hours per week for reading, and from 5 to 6 hours per week for math. Given the projection of about 28 hours of instruction per school-week (see Table 1-6), the time allocated to reading instruction decreases from about 32 percent of the school-week for Title I students in the first grade to about 18 percent for non-CE students in the sixth grade. The math allocation doesn't vary much with grade level, and tends to stay at around 20 percent of the school-week.

The differences among the six CE selection groups are parallel to the differences found for total hours of exposure, discussed earlier. That is, in grades 4, 5, and 6 for reading, and in

114

Table 4-3

Hours of Reading Instructional Services Received per Year for First-Grade Students, by Student Selection Category

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	1,708 First Graders		843 First Graders		562 First Graders		6,758 First Graders		2,887 First Graders		1,296 First Graders	
Reading Service	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Classroom teacher, 21+ students	41.69	63.33	36.91	51.17	22.55	40.35	46.86	66.12	44.63	59.72	65.05	102.31
Classroom teacher, 14–20 students	12.27	35.76	14.38	47.73	6.62	21.32	15.87	43.54	19.14	56.46	14.28	33.78
Classroom teacher, 7–13 students	51.35	55.02	68.31	62.77	48.31	61.27	78.91	70.15	77.46	78.30	71.30	58.86
Classroom teacher, 1–6 students	43.62	51.67	45.05	52.04	58.02	61.33	35.28	50.77	36.09	54.98	27.43	39.62
Special teacher, 7 or more students	14.98	34.53	5.94	20.91	7.82	22.17	0.80	6.13	0.73	6.43	0.33	3.87
Special teacher, 1–6 students	26.34	41.08	9.07	25.34	19.42	37.55	2.08	11.31	0.85	5.49	0.92	6.12
Aide or assistant, 1–10 students	26.62	39.79	26.86	33.64	16.28	24.47	10.79	26.81	5.91	20.35	6.04	14.34
Tutor or volunteer, individual	2.99	9.67	4.80	12.47	1.88	6.80	2.45	9.26	3.69	13.94	5.87	15.62
Ind. work, programmed material	9.73	28.70	3.53	14.38	10.71	26.10	8.90	27.25	11.99	33.37	3.44	13.59
Ind. work, nonprogrammed material	70.96	53.68	78.01	58.75	85.41	52.14	95.88	63.65	105.71	66.68	92.55	58.54

Table 4-4

Hours of Reading Instructional Services Received per Year for Second-Grade Students, by Student Selection Category

Reading Service	Title I Students in Title I Schools 1,836 Second Graders		Other-CE Students in Title I Schools 861 Second Graders		Other-CE Students in Other-CE Schools 609 Second Graders		Non-CE Students in Title I Schools 5,602 Second Graders		Non-CE Students in Other-CE Schools 2,511 Second Graders		Non-CE Students in Non-CE Schools 1,131 Second Graders	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Classroom teacher, 21+ students	28.51	51.92	31.50	57.35	22.04	39.18	43.40	71.42	36.30	58.94	29.84	45.20
Classroom teacher, 14–20 students	9.65	33.67	8.94	33.60	14.35	40.93	15.08	45.30	25.91	55.28	22.90	46.36
Classroom teacher, 7–13 students	57.70	59.21	71.93	60.72	54.69	65.72	70.79	72.89	73.71	77.09	72.57	70.30
Classroom teacher, 1–6 students	40.43	56.39	36.92	53.32	41.60	48.14	36.01	55.55	27.07	52.33	25.09	37.76
Special teacher, 7 or more students	19.19	34.79	4.71	18.50	6.72	18.26	1.67	10.00	0.87	5.62	0.52	5.64
Special teacher, 1-6 students	29.76	41.61	14.93	36.40	27.67	40.05	2.28	12.77	1.30	8.54	2.39	10.87
Aide or assistant, 1-10 students	20.92	32.67	20.24	31.29	12.51	21.94	6.50	20.22	6.60	23.28	3.05	9.43
Tutor or volunteer, individual	2.08	7.96	1.80	7.41	3.25	10.29	1.74	7.50	2.52	9.11	3.57	12.30
Ind. work, programmed material	10.31	26.74	4.40	21.02	7.86	21.56	12.13	32.92	12.82	33.07	4.06	14.53
Ind. work, nonprogrammed material	63.39	51.85	84.04	56.65	79.90	56.41	92.40	64.39	105.23	67.20	92.99	50.72

Table 4-5

Hours of Reading Instructional Services Received per Year for Third-Grade Students, by Student Selection Category

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	1,915 Third Graders		740 Third Graders		555 Third Graders		5,440 Third Graders		2,610 Third Graders		1,201 Third Graders	
Reading Service	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Classroom teacher, 21+ students	33.09	56.26	20.07	34.07	40.66	67.19	36.33	59.67	40.67	62.28	40.72	50.83
Classroom teacher, 14–20 students	10.66	29.24	7.75	26.78	15.26	38.90	15.94	35.62	33.27	90.81	19.90	43.85
Classroom teacher, 7–13 students	46.13	52.97	58.30	61.39	40.13	51.87	52.54	55.93	54.90	70.31	44.36	55.66
Classroom teacher, 1–6 students	33.19	43.10	35.51	39.80	38.49	48.84	26.18	40.01	18.14	36.72	31.57	44.01
Special teacher, 7 or more students	18.10	32.02	6.09	18.77	12.57	35.19	1.27	7.93	0.60	4.40	0.59	4.74
Special teacher, 1–6 students	24.57	33.21	18.75	43.27	26.48	42.71	2.50	12.97	1.04	8.06	1.78	8.59
Aide or assistant, 1–10 students	23.09	33.04	18.60	29.57	15.59	25.71	5.77	16.42	0.87	5.27	4.82	13.27
Tutor or volunteer, individual	2.25	7.68	1.25	4.87	1.35	4.34	1.36	5.79	1.39	10.44	1.18	5.31
Ind. work, programmed material	7.27	19.40	9.73	19.73	6.76	26.10	7.51	20.48	12.07	35.34	1.48	5.58
Ind. work, nonprogrammed material	58.30	43.95	85.73	6[illegible].08	64.44	38.39	86.61	57.73	76.79	57.71	79.47	45.93

Table 4-6

Hours of Reading Instructional Services Received per Year for Fourth-Grade Students, by Student Selection Category

Reading Service	Title I Students in Title I Schools 1,575 Fourth Graders Mean	S.D.	Other-CE Students in Title I Schools 713 Fourth Graders Mean	S.D.	Other-CE Students in Other-CE Schools 529 Fourth Graders Mean	S.D.	Non-CE Students in Title I Schools 5,544 Fourth Graders Mean	S.D.	Non-CE Students in Other-CE Schools 2,569 Fourth Graders Mean	S.D.	Non-CE Students in Non-CE Schools 1,207 Fourth Graders Mean	S.D.
Classroom teacher, 21+ students	36.11	58.67	21.71	38.51	30.44	45.20	37.13	58.41	44.74	60.40	56.78	55.98
Classroom teacher, 14–20 students	16.88	38.91	5.73	22.29	13.81	32.78	19.29	37.90	22.66	47.66	23.78	41.77
Classroom teacher, 7–13 students	40.54	51.29	52.24	55.86	35.11	46.70	41.32	51.75	40.22	50.69	25.74	37.26
Classroom teacher, 1–6 students	27.24	39.61	32.05	43.51	21.42	33.32	18.67	34.73	11.33	24.86	17.10	36.42
Special teacher, 7 or more students	13.46	30.04	5.75	19.08	12.40	26.49	1.78	11.62	0.87	7.76	0.06	1.61
Special teacher, 1–6 students	27.62	34.00	14.84	31.00	24.02	38.54	2.35	11.97	1.01	6.51	1.77	12.25
Aide or assistant, 1–10 students	16.54	25.75	11.43	24.82	13.43	26.62	3.18	10.87	1.70	10.56	0.29	1.90
Tutor or volunteer, individual	1.45	6.90	0.83	4.34	2.53	8.29	1.33	6.05	0.88	3.96	0.64	3.40
Ind. work, programmed material	8.62	20.57	4.88	13.52	15.50	32.98	6.91	18.15	11.52	29.45	8.67	22.33
Ind. work, nonprogrammed material	55.27	42.48	68.36	55.28	58.23	42.36	63.72	44.10	65.70	44.53	58.85	38.63

Table 4-7

Hours of Reading Instructional Services Received per Year for Fifth-Grade Students, by Student Selection Category

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	1,470 Fifth Graders		657 Fifth Graders		552 Fifth Graders		5,684 Fifth Graders		2,684 Fifth Graders		1,280 Fifth Graders	
Reading Service	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Classroom teacher, 21+ students	40.85	60.61	32.25	52.10	29.36	46.66	45.60	61.16	47.07	54.67	53.80	57.80
Classroom teacher, 14–20 students	15.67	34.59	11.91	32.33	8.19	25.81	18.09	37.00	15.88	32.67	13.42	29.19
Classroom teacher, 7–13 students	30.43	42.73	44.94	48.53	43.69	48.54	35.54	48.82	36.33	46.17	23.38	39.19
Classroom teacher, 1–6 students	22.89	34.32	20.58	33.86	19.74	30.18	16.13	31.13	9.83	22.69	23.19	39.45
Special teacher, 7 or more students	13.12	28.76	10.97	34.24	11.51	32.78	1.16	9.12	0.58	5.05	0.16	1.88
Special teacher, 1–6 students	23.77	36.02	13.33	31.48	18.59	34.25	2.09	13.39	0.74	6.32	1.54	7.62
Aide or assistant, 1–10 students	19.23	32.26	7.53	16.60	11.66	21.85	2.55	11.99	1.69	10.20	0.96	5.42
Tutor or volunteer, individual	1.10	4.64	0.75	4.15	4.61	9.32	0.58	3.25	1.59	8.27	0.89	5.23
Ind. work, programmed material	9.90	21.9[illegible]	7.15	17.24	14.36	29.46	6.86	19.82	11.12	28.71	13.31	31.06
Ind. work, nonprogrammed material	44.87	40.71	60.39	51.88	51.67	29.32	58.93	42.86	59.37	38.77	53.37	49.43

Table 4-8

Hours of Reading Instructional Services Received per Year for Sixth-Grade Students, by Student Selection Category

Reading Service	Title I Students in Title I Schools 1,172 Sixth Graders		Other-CE Students in Title I Schools 750 Sixth Graders		Other-CE Students in Other-CE Schools 556 Sixth Graders		Non-CE Students in Title I Schools 6,075 Sixth Graders		Non-CE Students in Other-CE Schools 4,407 Sixth Graders		Non-CE Students in Non-CE Schools 1,689 Sixth Graders	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Classroom teacher, 21+ students	25.23	48.60	35.21	40.98	31.06	43.69	45.25	54.66	50.50	50.78	60.71	60.62
Classroom teacher, 14–20 students	13.99	31.75	11.87	32.53	12.97	33.67	16.65	33.86	16.58	33.34	14.68	43.93
Classroom teacher, 7–13 students	37.61	52.79	31.69	48.25	28.63	41.28	26.29	41.11	22.87	41.00	13.35	42.02
Classroom teacher, 1–6 students	25.97	35.97	20.40	32.06	17.53	31.44	12.43	24.49	12.91	30.61	17.32	46.55
Special teacher, 7 or more students	20.39	40.75	17.51	42.44	11.88	31.70	1.63	12.26	4.17	13.25	7.70	24.03
Special teacher, 1–6 students	25.43	36.74	9.97	27.60	16.81	32.85	1.98	10.19	2.59	8.16	1.46	11.54
Aide or assistant, 1–10 students	14.52	30.25	7.95	18.16	10.70	24.13	1.28	6.88	0.49	3.70	0.22	3.19
Tutor or volunteer, individual	1.55	5.56	0.52	4.80	3.41	7.40	0.74	4.26	0.88	4.02	0.45	2.51
Ind. work, programmed material	9.46	17.05	8.76	20.13	17.85	31.82	9.23	19.74	8.82	28.29	12.33	27.41
Ind. work, nonprogrammed material	46.51	38.05	43.85	41.16	44.13	28.81	51.59	40.48	49.62	39.80	40.00	40.30

Table 4-9

Hours of Math Instructional Services Received per Year for First-Grade Students, by Student Selection Category

Math Service	Title I Students in Title I Schools 902 First Graders		Other-CE Students in Title I Schools 760 First Graders		Other-CE Students in Other-CE Schools 365 First Graders		Non-CE Students in Title I Schools 7,647 First Graders		Non-CE Students in Other-CE Schools 3,087 First Graders		Non-CE Students in Non-CE Schools 1,296 First Graders	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Classroom teacher, 21+ students	51.85	47.65	35.21	35.50	28.59	48.76	60.98	57.26	67.01	56.18	68.55	56.31
Classroom teacher, 14–20 students	12.18	34.06	18.71	37.17	9.24	25.01	14.89	32.68	11.75	28.63	13.30	24.59
Classroom teacher, 7–13 students	17.01	26.03	15.80	26.67	20.00	31.43	12.57	27.47	9.72	23.25	8.14	21.18
Classroom teacher, 1–6 students	12.77	20.82	12.72	19.65	20.48	24.81	9.63	20.47	7.93	16.49	11.74	21.38
Special teacher, 7 or more students	13.56	26.59	1.11	7.27	2.26	8.43	0.63	4.58	0.13	1.67	0.02	0.50
Special teacher, 1–6 students	4.69	12.77	2.43	10.29	4.79	14.63	0.39	3.52	0.23	2.53	0.61	3.98
Aide or assistant, 1–10 students	20.11	26.89	11.31	17.05	14.76	15.60	3.24	11.16	0.88	4.44	2.86	11.00
Tutor or volunteer, individual	1.52	5.97	1.90	5.13	1.33	4.43	1.02	4.23	0.83	3.29	0.96	3.19
Ind. work, programmed material	2.90	8.65	1.58	7.25	0.93	3.79	1.75	8.19	0.48	2.60	0.47	3.05
Ind. work, nonprogrammed material	38.75	27.02	40.65	22.93	65.32	37.94	57.82	37.36	57.72	34.46	53.19	37.64

Table 4-10

Hours of Math Instructional Services Received per Year for Second-Grade Students, by Student Selection Category

Math Service	Title I Students in Title I Schools 889 Second Graders		Other-CE Students in Title I Schools 646 Second Graders		Other-CE Students in Other-CE Schools 308 Second Graders		Non-CE Students in Title I Schools 6,762 Second Graders		Non-CE Students in Other-CE Schools 2,811 Second Graders		Non-CE Students in Non-CE Schools 1,131 Second Graders	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D,
Classroom teacher, 21+ students	53.68	50.88	33.97	36.21	33.28	51.74	65.16	52.91	61.90	54.19	69.84	51.55
Classroom teacher, 14–20 students	17.02	32.01	13.00	32.82	5.09	15.58	11.01	26.14	12.85	27.95	12.89	28.61
Classroom teacher, 7–13 students	11.59	22.82	16.56	26.53	32.29	40.44	11.81	31.76	8.84	19.35	13.04	26.01
Classroom teacher, 1–6 students	9.27	19.45	10.64	20.16	15.79	25.13	11.87	22.82	9.44	18.68	9.08	19.68
Special teacher, 7 or more students	10.15	20.83	0.94	7.53	4.97	14.68	0.93	6.19	0.19	2.24	0.11	1.45
Special teacher, 1–6 students	10.02	29.61	2.75	15.34	5.60	15.67	0.61	5.02	0.28	3.18	0.31	2.79
Aide or assistant, 1–10 students	16.24	22.01	16.64	25.80	15.86	15.89	2.91	10.73	1.94	7.20	0.76	4.01
Tutor or volunteer, individual	1.26	4.26	1.34	4.01	2.14	5.94	0.68	3.54	0.76	3.32	0.98	4.01
Ind. work, programmed material	6.34	14.77	2.70	15.10	4.09	11.28	2.59	11.31	3.67	12.72	0.59	4.74
Ind. work, nonprogrammed material	46.63	26.11	51.19	24.62	52.43	34.07	59.38	34.44	56.28	30.80	57.24	28.67

Table 4-11

Hours of Math Instructional Services Received per Year for Third-Grade Students, by Student Selection Category

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	1,010 Third Graders		567 Third Graders		380 Third Graders		6,517 Third Graders		2,786 Third Graders		1,201 Third Graders	
Math Service	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Classroom teacher, 21+ students	53.93	56.89	53.20	55.28	59.40	62.31	68.45	52.07	69.75	56.35	60.56	42.43
Classroom teacher, 14–20 students	10.86	20.97	15.19	31.55	8.78	20.22	10.70	25.26	12.86	30.25	17.94	38.24
Classroom teacher, 7–13 students	21.95	33.27	12.40	25.18	20.59	34.33	11.47	25.95	13.55	31.26	10.09	26.74
Classroom teacher, 1–6 students	13.44	20.72	13.92	20.44	14.51	24.88	9.52	18.99	8.14	22.51	12.23	26.65
Special teacher, 7 or more students	13.76	24.26	1.65	7.39	3.22	13.16	0.81	5.74	0.44	5.02	0.11	1.26
Special teacher, 1–6 students	10.69	18.61	5.53	18.51	9.24	21.93	1.25	8.09	0.53	6.12	0.47	4.28
Aide or assistant, 1–10 students	19.86	24.41	11.54	18.65	15.21	22.74	3.20	10.79	0.08	0.96	0.66	4.06
Tutor or volunteer, individual	1.75	5.63	0.80	2.73	1.11	3.23	0.96	3.76	0.55	2.60	0.81	3.18
Ind. work, programmed material	4.27	11.11	1.12	3.48	8.11	26.43	3.41	12.16	0.99	5.77	2.96	12.23
Ind. work, nonprogrammed material	41.66	30.05	55.67	34.09	58.54	35.02	60.78	36.47	57.21	36.86	61.31	32.33

Table 4-12

Hours of Math Instructional Services Received per Year for Fourth-Grade Students, by Student Selection Category

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	917 Fourth Graders		652 Fourth Graders		363 Fourth Graders		6,262 Fourth Graders		2,734 Fourth Graders		1,205 Fourth Graders	
Math Service	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Classroom teacher, 21+ students	56.44	58.57	52.11	50.10	54.54	45.87	63.56	52.43	73.61	55.73	74.32	50.35
Classroom teacher, 14-20 students	15.24	32.47	13.69	33.59	5.59	14.93	14.08	30.99	12.87	26.94	17.66	32.01
Classroom teacher, 7-13 students	14.68	26.58	25.94	50.40	9.98	20.86	12.87	28.93	10.77	22.99	10.99	26.89
Classroom teacher, 1-6 students	17.75	30.68	14.70	31.38	13.26	21.80	10.93	22.21	7.69	18.19	10.78	27.68
Special teacher, 7 or more students	8.84	18.40	1.08	5.40	6.49	17.29	2.48	15.67	0.33	2.89	0.11	1.88
Special teacher, 1-6 students	13.44	22.89	8.92	22.65	13.53	30.35	2.20	11.90	0.78	4.94	0.85	6.67
Aide or assistant, 1-10 students	13.23	19.37	3.83	11.67	13.64	22.60	2.01	8.14	1.54	7.07	0.26	2.25
Tutor or volunteer, individual	1.42	5.33	0.46	2.93	1.35	3.80	1.07	4.51	0.91	5.82	0.99	4.57
Ind. work, programmed material	8.66	20.02	1.46	6.46	17.52	39.57	5.94	16.37	1.18	4.41	1.04	6.24
Ind. work, nonprogrammed material	45.89	33.30	60.87	37.55	51.92	35.66	53.28	37.99	52.57	35.28	55.08	36.88

Table 4-13

Hours of Math Instructional Services Received per Year for Fifth-Grade Students, by Student Selection Category

	Title I Students in Title I Schools 845 Fifth Graders		Other-CE Students in Title I Schools 550 Fifth Graders		Other-CE Students in Other-CE Schools 415 Fifth Graders		Non-CE Students in Title I Schools 6,414 Fifth Graders		Non-CE Students in Other-CE Schools 2,819 Fifth Graders		Non-CE Students in Non-CE Schools 1,281 Fifth Graders	
Math Service	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Classroom teacher, 21+ students	54.64	58.78	54.38	59.70	39.38	44.73	71.96	65.33	67.80	50.81	69.84	59.22
Classroom teacher, 14-20 students	11.81	28.71	10.37	25.71	6.16	21.16	13.64	30.87	9.69	23.33	11.15	23.56
Classroom teacher, 7-13 students	23.84	40.20	16.94	36.10	21.53	33.02	17.26	33.72	12.58	26.57	13.77	31.29
Classroom teacher, 1-6 students	16.04	27.06	18.17	26.39	15.51	22.52	11.45	27.70	10.42	20.23	18.55	35.09
Special teacher, 7 or more students	15.88	30.77	2.72	10.32	8.75	23.44	2.24	17.58	1.19	9.17	0.43	2.55
Special teacher, 1-6 students	18.19	34.73	6.27	21.78	9.72	21.40	1.62	10.00	0.72	5.33	1.02	5.15
Aide or assistant, 1-10 students	16.48	28.77	3.97	11.17	9.71	14.89	1.90	8.93	1.85	10.26	0.96	4.04
Tutor or volunteer, individual	1.63	5.09	0.52	3.06	2.45	6.52	0.76	3.59	0.78	3.18	0.82	3.66
Ind. work, programmed material	7.58	18.68	6.91	18.13	10.43	22.59	5.47	17.16	2.65	9.47	4.16	12.82
Ind. work, nonprogrammed material	37.20	34.55	41.16	34.39	51.08	27.31	44.42	36.04	52.10	35.68	48.34	38.81

Table 4-14

Hours of Math Instructional Services Received per Year for Sixth-Grade Students, by Student Selection Category

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	671 Sixth Graders		652 Sixth Graders		434 Sixth Graders		6,669 Sixth Graders		4,530 Sixth Graders		1,689 Sixth Graders	
Math Service	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Classroom teacher, 21+ students	33.83	48.10	39.48	45.02	44.02	48.07	68.16	58.97	81.67	60.98	80.81	58.88
Classroom teacher, 14–20 students	20.12	38.62	12.28	24.83	9.81	29.37	12.12	28.98	12.78	31.20	4.82	22.83
Classroom teacher, 7–13 students	19.82	39.27	18.00	31.84	14.36	31.07	12.27	27.87	13.05	36.02	16.81	39.58
Classroom teacher, 1–6 students	22.33	31.76	20.59	24.58	11.60	20.53	12.28	25.08	5.71	16.64	13.64	35.96
Special teacher, 7 or more students	14.77	30.06	2.16	13.77	11.68	30.35	1.06	8.29	2.29	9.64	4.25	21.99
Special teacher, 1–6 students	14.61	29.18	4.80	16.41	8.61	19.40	1.17	6.49	0.61	4.07	0.60	5.90
Aide or assistant, 1–10 students	13.78	23.10	3.90	11.92	9.62	14.30	1.25	5.66	0.24	2.15	0.15	1.58
Tutor or volunteer, individual	1.64	4.83	1.48	6.67	2.82	6.52	0.80	4.26	0.80	3.22	0.79	3.39
Ind. work, programmed material	3.79	13.12	9.98	24.47	16.87	29.34	8.77	27.69	3.32	10.89	3.41	12.00
Ind. work, nonprogrammed material	37.27	35.17	43.13	31.43	40.84	29.22	43.27	39.80	39.01	37.94	36.90	30.48

Table 4-15

Number of Hours per Week Devoted to Reading and Math Activities, by Grade and by CE Category

	Title I Students in Title I Schools			Other-CE Students in Title I Schools			Other-CE Students in Other-CE Schools			Non-CE Students in Title I Schools			Non-CE Students in Other-CE Schools			Non-CE Students in Non-CE Schools		
Grade	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
							Hours Per Week Spent in Reading Activities											
1	9.23	2.92	1,708	8.88	3.25	843	8.20	2.37	562	8.96	2.82	6,758	8.98	2.58	2,887	8.53	2.95	1,296
2	8.51	2.74	1,836	8.31	3.08	861	8.00	2.86	609	8.35	2.82	5,602	8.51	2.42	2,511	7.53	2.67	1,131
3	7.74	2.47	1,915	7.78	2.33	740	7.73	2.80	555	6.97	2.34	5,440	7.00	2.45	2,610	6.61	2.36	1,201
4	7.29	2.39	1,575	6.47	1.95	713	6.77	1.83	529	5.79	1.86	5,544	5.92	1.47	2,569	5.73	1.29	1,207
5	6.63	2.15	1,470	6.34	2.15	657	6.32	1.56	552	5.54	1.87	5,684	5.40	1.22	2.684	5.43	1.30	1,280
6	6.59	2.15	1,172	5.62	1.94	750	5.85	1.83	556	4.94	1.55	6,075	5.02	1.66	4,407	5.01	1.86	1,689
							Hours Per Week Spent in Math Activities											
1	5.47	1.85	902	4.29	1.18	760	4.93	1.21	365	4.92	1.93	7,647	4.60	1.42	3,087	4.74	1.70	1,296
2	5.60	1.61	889	4.48	1.17	646	5.02	0.89	308	4.97	1.51	6,762	4.56	1.16	2,811	4.83	1.52	1,131
3	5.82	1.59	1,010	5.16	1.13	567	5.85	2.10	380	5.05	1.28	6,517	4.78	0.89	2,786	4.88	1.43	1,201
4	5.87	2.04	917	5.49	1.42	652	5.61	1.77	363	4.97	1.22	6,262	4.76	0.70	2,734	5.10	1.11	1,205
5	6.13	1.83	845	4.85	1.19	550	5.21	0.96	415	5.05	1.37	6,414	4.67	0.72	2,819	5.01	1.03	1,281
6	5.57	1.74	671	4.65	0.97	652	5.14	0.96	434	4.76	0.99	6,669	4.72	1.24	4,530	4.81	1.25	1,689

grades 3, 4, and 5 for math CE students, particularly Title I students, receive more instruction weekly than do their non-CE peers. The amounts of variance accounted for by the student selection category are 7.7 percent, 5.7 percent, and 7.0 percent in reading (grades 4, 5, and 6 respectively), and 5.1 percent, 5.7 percent, and 7.0 percent in math (grades 3, 4, and 5 respectively).

Instructional Approaches in Reading and Mathematics

In this section, we turn to the Teacher Questionnaire to describe, in some detail, the instructional approaches and methods that are used to teach reading and math to the students in our sample. In all instances, the teachers' responses were extended to their students, and the analyses performed at the student level.

Six aspects of interest in reading and in math are discussed: (1) the formation of subgroups for instruction, (2) the use of detailed lesson plans, (3) individualized instruction, and specific learning activities, (4) the amount of feedback provided to students, (5) the amount of homework assigned, and (6) the use of instructional equipment. In addition, the relative emphases given to ten different approaches for teaching reading, and the characteristics of other reading-related activities were examined. These aspects were chosen for examination not only because they would provide a more detailed description of classroom activities and teachers' instructional practices, but because the research literature indicates that these variables have an impact on student achievement.

Forming Subgroups for Instruction. Three items in the Teacher Questionnaire addressed the subject of grouping and tracking. The first item asks on what basis the teacher selects students for instructional groups. The second item identifies the mixture of grade and achievement levels within groups, and the third item indicates how frequently the composition of the instructional group changes.

Table 4-16 presents the percentages of students, for reading and math separately, classified into seven types of selection sub-groups. It may be seen that grouping for instruction is much more common for reading than for math. When grouping is used, students are usually placed in groups on the basis of students' achievement level as judged by the teachers, or students' mastery of specific instructional objectives. Apititude tests, student self-selection, and other student characteristics are used very infrequently for placing students into groups, while previous achievement is used somewhat frequently for reading in the higher grades.

Table 4-17 indicates the composition of the instructional groups. For both reading and math in the primary grades, the most dominant pattern is groups composed of students in a single grade at the same level of achievement; however, groups of students from a single grade, but different achievement levels, are also common. In reading, these two grouping patterns are augmented in the higher grades by groups composed of students in different grades who are at the same level of achievement. There is also a tendency to use less subgrouping in the upper grades. The other three grouping patterns shown in the table are used infrequently.

Table 4-18 indicates the annual frequency with which instructional subgroups change. Changes are more common in math than in reading, occurring about 4 to 9 times a year in

Table 4-16

Percentages of Students Whose Teachers Use Various Bases for Selecting Students for Subgroups in Reading and Math Instruction

Basis for Forming Subgroups	Title I Students in Title I Schools Reading (N=9,566)	Title I Students in Title I Schools Math (N=5,089)	Other-CE Students in Title I Schools Reading (N=4,235)	Other-CE Students in Title I Schools Math (N=3,702)	Other-CE Students in Other-CE Schools Reading (N=3,300)	Other-CE Students in Other-CE Schools Math (N=2,117)	Non-CE Students in Title I Schools Reading (N=35,465)	Non-CE Students in Title I Schools Math (N=39,658)	Non-CE Students in Other-CE Schools Reading (N=17,483)	Non-CE Students in Other-CE Schools Math (N=17,967)	Non-CE Students in Non-CE Schools Reading (N=7,959)	Non-CE Students in Non-CE Schools Math (N=7,826)
Grade 1 (R N=14,495) (M N=14,163)												
No subgroups	7.6	29.0	4.9	18.3	14.2	48.9	6.0	42.0	5.6	46.4	9.7	48.6
Prior achievement	4.7	0.5	3.8	3.0	2.3	0.0	1.9	0.5	5.2	0.0	4.7	0.0
Aptitude tests	3.5	1.0	0.3	0.0	0.0	0.0	2.8	0.3	0.0	0.0	0.0	0.0
Judgment of present achievement	50.2	35.9	66.7	47.4	54.1	16.8	61.5	34.6	65.2	28.3	56.2	20.6
Unrelated characteristics	0.0	0.8	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Student self-selection	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mastery of objectives	34.1	32.7	24.3	30.1	29.4	34.3	27.8	22.5	24.0	25.3	29.4	30.9
Grade 2 (R N=12,890) (M N=12,545)												
No subgroups	8.4	29.1	5.6	37.8	14.4	37.1	9.7	40.8	5.8	44.8	9.4	51.1
Prior achievement	16.4	6.4	8.9	1.1	5.6	10.2	17.1	5.7	13.4	2.4	19.2	2.5
Aptitude tests	1.1	0.9	0.1	0.0	0.2	0.0	0.8	0.2	0.1	0.0	4.8	2.2
Judgment of present achievement	46.1	33.3	53.2	22.9	45.6	11.3	46.6	27.5	49.6	29.9	62.1	23.4
Unrelated characteristics	0.2	0.0	0.0	0.0	0.0	0.0	0.9	0.0	1.2	0.0	0.0	0.0
Student self-selection	0.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mastery of objectives	27.8	30.3	32.2	38.2	29.5	41.3	25.0	25.8	29.9	22.9	4.5	20.8
Grade 3 (R N=12,598) (M N=12,438)												
No subgroups	10.1	29.7	14.9	31.2	11.1	34.9	10.4	40.0	16.8	40.1	15.9	30.0
Prior achievement	19.8	3.5	9.6	3.4	11.1	3.8	17.6	4.3	22.9	10.5	19.3	6.6
Aptitude tests	4.1	3.3	0.8	0.4	4.7	0.5	2.2	0.6	2.9	1.0	0.0	0.0
Judgment of present achievement	45.9	25.7	48.9	25.4	62.1	37.9	47.2	29.5	38.7	19.3	34.3	24.6
Unrelated characteristics	0.1	0.7	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.0	2.9	0.0
Student self-selection	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.9	0.0	0.0	0.0
Mastery of objectives	20.1	37.1	25.8	39.6	10.7	22.9	22.2	25.3	17.9	29.0	27.6	38.8
Grade 4 (R N=12,213) (M N=11,694)												
No subgroups	13.5	31.5	6.5	23.2	17.9	34.8	12.0	33.3	14.0	36.1	12.5	20.2
Prior achievement	18.9	2.1	21.7	6.7	18.3	1.8	20.9	3.8	18.2	8.0	15.0	1.7
Aptitude tests	3.8	1.9	1.0	0.0	10.7	0.0	3.6	0.5	3.4	0.0	2.8	0.0
Judgment of present achievement	39.4	28.6	45.8	46.6	29.9	47.7	40.4	31.7	39.2	26.3	54.4	52.7
Unrelated characteristics	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Student self-selection	0.0	0.0	0.1	0.0	1.0	0.0	0.5	0.0	1.1	0.0	0.0	0.0
Mastery of objectives	24.4	35.8	24.8	23.5	22.3	15.6	22.6	30.5	24.1	29.6	15.3	25.5
Grade 5 (R N=12,316) (M N=11,945)												
No subgroups	18.6	24.4	14.5	39.0	14.5	20.2	22.4	34.1	27.3	33.6	26.9	24.7
Prior achievement	13.2	6.8	17.4	0.2	21.8	6.1	15.1	5.1	28.6	7.8	21.4	3.7
Aptitude tests	1.1	0.4	10.3	0.2	0.2	0.0	0.6	2.1	0.0	0.0	1.4	0.0
Judgment of present achievement	39.7	25.5	33.3	26.3	27.3	45.5	40.2	28.8	24.3	31.2	34.8	37.5
Unrelated characteristics	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	2.3	2.3
Student self-selection	2.6	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.1	0.0	3.9	2.4
Mastery of objectives	24.8	42.0	24.5	34.4	36.1	28.3	20.9	29.2	19.7	27.4	9.3	29.5
Grade 6 (R N=13,496) (M N=13,574)												
No subgroups	16.3	20.2	18.6	15.1	28.4	30.2	21.7	36.5	28.2	33.0	43.9	44.8
Prior achievement	13.6	7.9	20.1	5.2	18.0	2.9	20.8	5.2	27.4	3.6	11.2	4.5
Aptitude tests	3.3	2.6	9.7	0.3	1.4	0.5	3.6	1.3	2.2	0.0	1.7	1.2
Judgment of present achievement	38.7	27.6	26.6	45.1	27.4	26.5	30.5	24.4	26.9	35.9	28.8	16.5
Unrelated characteristics	0.1	0.0	0.0	0.0	2.0	0.0	1.0	0.0	0.8	0.0	0.0	0.0
Student self-selection	0.4	0.6	0.0	0.2	0.4	0.0	1.3	1.3	2.3	0.0	0.7	0.0
Mastery of objectives	27.7	41.1	25.0	34.1	22.3	39.8	21.1	31.3	12.2	27.5	13.8	33.0

NOTE: Ns above each column indicate the total number of students in a column (all grades combined).
Ns under each grade indicate the total number of students in each grade for reading (R) and for math (M), all CE categories combined.
Sample size for each selection category by grade is available in Table 4-18.

Table 4-17

Percentages of Students in Various Types of Subgroups for Reading and Math Instruction

Type of Subgroup	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	Reading (N=9,566)	Math (N=5,880)	Reading (N=4,235)	Math (N=3,782)	Reading (N=3,300)	Math (N=2,117)	Reading (N=35,463)	Math (N=39,638)	Reading (N=17,483)	Math (N=17,807)	Reading (N=7,709)	Math (N=7,836)
Grade 1 (R N=14,495) (M N=14,163)												
No subgroups	7.9	28.1	4.9	18.0	14.2	48.9	6.0	42.0	6.4	46.4	8.0	48.6
Single grade, same level	49.0	29.1	51.3	36.7	55.3	36.5	51.2	29.7	46.8	31.2	50.7	25.3
Single grade, different levels	31.6	33.3	29.2	35.8	27.4	11.0	34.1	22.3	40.7	20.6	22.9	12.4
Different grades, same level	6.3	2.3	13.0	5.6	0.7	2.2	3.7	1.5	1.7	0.0	6.3	3.1
Different grades, different levels	1.4	1.3	0.6	2.3	1.4	0.0	0.0	0.3	0.0	0.4	1.5	0.7
Ungraded, same level	2.2	1.8	0.3	1.7	0.9	0.0	3.2	3.7	3.5	0.0	4.9	4.1
Ungraded, different levels	1.7	4.1	0.7	0.0	0.0	1.4	1.9	0.5	0.9	1.3	5.6	5.7
Grade 2 (R N=12,899) (M N=12,343)												
No subgroups	8.9	29.0	6.5	37.8	14.4	37.1	10.2	40.5	5.8	44.8	9.4	51.1
Single grade, same level	46.8	24.5	40.6	37.8	33.1	24.0	49.7	28.6	45.2	31.5	35.9	22.6
Single grade, different levels	28.3	38.2	41.5	17.8	29.0	6.0	26.8	21.7	43.1	18.6	34.3	15.7
Different grades, same level	8.7	2.9	4.8	2.7	12.1	13.1	6.5	2.5	3.6	2.5	8.3	4.2
Different grades, different levels	3.4	1.8	1.6	1.3	6.8	19.8	0.9	1.0	1.0	0.7	2.4	3.0
Ungraded, same level	2.8	3.7	0.8	2.7	0.0	0.0	3.6	5.4	1.4	2.0	4.5	3.3
Ungraded, different levels	1.0	0.0	4.1	0.0	4.7	0.0	2.3	0.3	0.0	0.0	5.1	0.0
Grade 3 (R N=12,590) (M N=12,438)												
No subgroups	10.5	30.5	24.8	31.4	11.1	35.4	10.7	41.2	16.8	40.1	12.3	31.5
Single grade, same level	38.2	26.6	29.3	38.5	31.3	32.4	41.8	25.2	38.7	33.3	28.7	26.4
Single grade, different levels	28.9	23.5	33.0	23.4	38.3	20.2	32.6	21.7	36.6	19.9	43.9	32.6
Different grades, same level	15.1	7.5	6.7	1.5	15.2	4.9	8.6	3.6	5.2	5.8	4.2	3.1
Different grades, different levels	1.9	2.0	2.3	0.4	3.0	7.1	1.2	1.7	2.7	0.9	2.4	0.8
Ungraded, same level	3.4	9.0	2.7	4.9	0.0	0.0	2.6	5.1	0.0	0.0	3.8	3.7
Ungraded, different levels	2.0	0.9	1.2	0.0	1.1	0.0	2.6	1.5	0.0	0.0	4.7	1.9
Grade 4 (R N=12,213) (M N=11,694)												
No subgroups	13.8	31.8	7.0	23.9	17.9	26.4	12.1	33.3	14.0	35.6	11.5	19.6
Single grade, same level	30.8	18.7	47.3	38.5	45.9	30.3	39.4	29.4	52.7	29.9	39.2	37.7
Single grade, different levels	28.3	30.5	30.0	23.9	17.5	32.7	28.6	22.8	23.8	25.7	28.7	29.7
Different grades, same level	17.5	8.7	4.8	6.7	16.2	4.8	12.3	4.2	7.6	8.1	13.6	13.0
Different grades, different levels	4.2	1.9	2.5	0.0	2.5	5.7	2.3	1.6	1.9	0.6	4.7	0.0
Ungraded, same level	3.0	3.0	3.0	6.8	0.0	0.0	2.2	4.2	0.0	0.0	0.1	0.0
Ungraded, different levels	2.4	5.5	5.5	0.3	0.0	0.0	3.0	4.5	0.0	0.0	2.2	0.0
Grade 5 (R N=12,316) (M N=11,945)												
No subgroups	18.3	24.5	15.2	39.8	14.5	20.2	22.7	34.4	27.3	33.6	24.0	22.5
Single grade, same level	35.6	29.1	38.7	40.6	43.3	24.7	37.2	37.7	35.1	30.2	28.6	26.6
Single grade, different levels	22.3	29.1	26.8	16.3	26.4	40.2	25.0	19.9	27.3	32.2	32.6	37.9
Different grades, same level	20.4	8.7	15.4	1.5	15.8	14.9	10.5	4.7	10.3	3.8	10.4	7.5
Different grades, different levels	0.6	2.7	2.0	0.4	0.0	0.0	1.9	1.1	0.0	0.1	0.8	0.0
Ungraded, same level	0.6	2.3	0.0	1.3	0.0	0.0	0.4	0.9	0.0	0.0	0.9	0.9
Ungraded, different levels	2.3	3.6	2.0	0.2	0.0	0.0	2.3	1.3	0.0	0.0	2.7	4.5
Grade 6 (R N=13,486) (M N=13,534)												
No subgroups	19.1	21.0	18.6	15.1	28.4	28.9	21.8	36.9	28.2	32.9	32.9	44.8
Single grade, same level	33.6	35.6	43.6	44.8	32.3	32.4	37.3	34.9	33.6	49.8	26.2	29.3
Single grade, different levels	28.3	28.9	21.6	38.3	31.1	27.5	28.8	23.0	30.5	15.9	33.9	19.8
Different grades, same level	16.7	9.7	16.2	1.5	7.8	10.7	10.5	3.3	7.6	1.4	4.0	2.6
Different grades, different levels	1.4	1.1	0.0	0.0	0.4	0.0	0.4	0.3	0.1	0.0	1.8	1.6
Ungraded, same level	0.3	3.1	0.0	0.3	0.0	0.5	0.4	0.8	0.0	0.0	1.2	1.3
Ungraded, different levels	0.6	0.6	0.0	0.0	0.0	0.0	0.8	0.9	0.0	0.0	0.0	0.5

NOTE: Ns above each column indicate the total number of students in a column (all grades combined).
Ns under each grade indicate the total number of students in each grade, for reading (R) and for math (M), all CE categories combined.
Sample size for each selection category by grade is available in Table 4-18.

Table 4-18

Annual Frequencies of Instructional Subgroup Changes in Reading and Math

	Title I Students in Title I Schools			Other-CE Students in Title I Schools			Other-CE Students in Other-CE Schools			Non-CE Students in Title I Schools			Non-CE Students in Other-CE Schools			Non-CE Students in Non-CE Schools		
Grade	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
									Reading									
1	5.56	7.68	1,720	5.30	7.00	861	5.42	5.17	562	5.16	5.97	7,071	4.07	3.56	2,935	5.05	5.84	1,346
2	4.15	6.16	1,845	3.29	3.10	857	3.47	3.74	620	4.07	6.31	5,802	4.16	6.26	2,578	3.09	2.44	1,188
3	3.93	6.08	1,900	3.75	7.22	743	3.64	5.35	559	3.59	5.52	5,576	4.37	7.52	2,571	5.46	8.71	1,249
4	4.58	7.56	1,560	4.52	7.08	673	3.41	4.70	525	3.59	5.71	5,707	3.07	3.72	2,568	2.99	4.05	1,180
5	5.56	8.55	1,420	3.88	4.51	564	5.39	8.15	545	3.65	6.12	5,740	3.73	6.24	2,733	4.38	9.12	1,314
6	5.74	8.35	1,121	2.98	5.23	537	3.58	5.17	489	4.23	7.67	5,569	3.21	6.35	4,098	2.60	3.04	1,682
									Math									
1	7.34	11.21	910	6.24	10.46	774	7.01	11.69	364	5.31	9.82	7,807	4.54	8.66	2,970	3.79	8.08	1,338
2	6.38	10.03	901	8.67	12.50	625	8.19	13.88	283	5.97	10.94	6,903	4.12	8.39	2,679	4.03	8.47	1,154
3	6.62	10.36	983	10.37	15.15	551	3.53	6.28	367	6.84	11.80	6,616	6.93	11.54	2,693	5.81	8.50	1,228
4	9.09	12.52	847	6.17	9.23	616	4.79	6.39	333	6.35	10.58	6,144	5.84	10.43	2,560	7.55	10.77	1,194
5	8.86	10.79	828	8.38	11.04	480	8.92	11.97	396	6.67	10.59	6,103	6.77	11.21	2,865	7.89	10.52	1,273
6	8.13	9.68	620	14.05	14.72	656	6.59	9.83	374	6.52	10.53	6,085	6.16	9.37	4,200	4.79	9.85	1,639

math, compared with about 3 to 5 times a year in reading. There were no appreciable differences among students in the six CE selection categories with respect to their teachers' use of subgroups for instruction.

Use of Lesson Plans. All of the teachers were asked whether they used (1) detailed lesson plans containing specific objectives and activities, (2) general lesson plans that provide broad objectives and categories of activities, or (3) no lesson plans, letting students' interests and needs dictate classroom activities. Table 4-19 presents the percentages of students whose teachers indicated the use of each type of lesson plan. For both reading and math general lesson plans are the most common, followed by detailed lesson plans. Letting the students' interests and needs dictate classroom activities is a very infrequent method. It is interesting to note that, in the upper grades, detailed lesson plans are more frequently used in math than in reading. There are no consistent or striking differences among the six categories of students in the type of lesson plan their teacher used.

Individualized Instruction and Specific Learning Activities. Individualization is a very broad concept that can apply to a wide variety of teaching methods. For this analysis the concept is used to tie together three items from the Teacher Questionnaire. The first item asked teachers whether certain aspects of their instruction were basically the same for most students or tended to vary among the students. The second item asked teachers to identify, separately for their regular students and their low-achieving students, whether the content they taught was based on a standard curriculum or on diagnosed individual needs. The third item consisted of a list of specific activities for which the teachers were asked to rate how frequently regular students and low-achieving students engaged in each activity. Responses to these last two items were then differentially extended to students by assigning the teachers' responses concerning regular achievers to those students who are regular achievers, and responses concerning low-achievers to those students who are low achievers.

Table 4-20 presents the results for the first item on individualization; the percentage of students whose teachers report that instruction varies among students. The greatest amount of variation occurs for 'expected rate of progress,' that is, most students are not expected to progress at the same rate. In addition, for many students, the teaching methods, types of instructional materials, instructional objectives, and sequence of learning activities also vary. The least amount of variation is seen in the total time spent in reading and math activities. There are no substantial differences among the six categories of students in this aspect of individualization, that is, the amount of variation is fairly consistent regardless of the CE selection status of the student.

In Table 4-21, the percentages of students whose teachers select content for instruction based on the approved curriculum, individual needs, or some combination of the two are presented. The patterns here are fairly complex. In reading, the selection of teaching content based entirely on individual needs is infrequent in the lower grades, but becomes more frequent in the upper grades. The use of an approved, standard curriculum tends to be more common in the lower grades. In all grades a combination of approved curriculum and individual needs describes the most common basis for determining the content taught. In math, an additional trend is observed: the use of a curriculum based on individual need is more frequent for CE students than for non-CE students, while the use of an approved curriculum

Table 4-19

Percentages of Students Whose Teachers Use Lesson Plans for Reading and Math Instruction

Type of Lesson Plan	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other CE-Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	Reading (N=9,566)	Math (N=5,089)	Reading (N=4,235)	Math (N=3,702)	Reading (N=3,300)	Math (N=2,117)	Reading (N=35.465)	Math (N=39,658)	Reading (N=17,483)	Math (N=17,967)	Reading (N=7,959)	Math (N=7,826)
Grade 1												
(R N=14,495) (M N=14,163)												
Detailed Plans	43.1	41.2	48.5	45.0	23.8	12.1	46.7	40.6	41.0	39.3	38.6	42.6
General Plans	54.8	53.5	51.2	53.6	66.0	81.3	50.3	56.1	58.1	59.9	58.1	50.1
Students' Interests/Needs	2.1	5.3	0.2	1.4	10.1	6.6	2.9	3.2	0.9	0.8	3.3	7.2
Grade 2												
(R N=12,890) (M N=12,545)												
Detailed Plans	45.5	41.5	40.6	20.8	35.0	50.5	47.2	43.8	46.0	44.2	24.8	34.8
General Plans	49.1	56.8	53.2	76.5	54.4	29.0	46.4	53.6	54.0	52.3	68.9	57.8
Students' Interests/Needs	5.4	1.7	6.2	2.7	10.6	20.5	6.4	2.6	0.0	3.6	6.3	7.4
Grade 3												
(R N=12,598) (M N=12,438)												
Detailed Plans	46.8	33.0	42.4	25.8	27.4	27.8	48.7	45.3	41.9	39.9	50.0	52.4
General Plans	47.8	57.8	45.0	59.7	58.3	46.6	48.2	50.8	52.9	56.8	47.2	44.1
Students' Interests/Needs	5.4	9.3	12.7	14.5	14.3	25.6	3.1	3.9	5.2	3.3	2.7	3.4
Grade 4												
(R N=12,213) (M N=11,694)												
Detailed Plans	35.5	28.9	37.0	30.5	39.4	24.0	37.2	39.0	46.3	37.1	34.9	36.5
General Plans	59.4	66.8	55.3	65.4	51.6	65.8	60.4	57.8	51.6	59.9	51.0	56.4
Students' Interests/Needs	5.1	4.3	7.7	4.1	9.0	10.2	2.4	3.2	2.1	3.0	14.1	7.0
Grade 5												
(R N=12,316) (M N=11,945)												
Detailed Plans	33.6	47.0	26.2	49.0	48.4	50.0	34.7	36.8	40.7	41.5	37.1	48.9
General Plans	63.2	48.4	69.9	45.4	40.7	41.9	60.0	57.1	59.3	50.1	56.8	42.5
Students' Interests/Needs	3.2	4.6	3.9	5.6	10.8	8.1	5.3	6.1	0.0	8.4	6.1	8.6
Grade 6												
(R N=13,496) (M N=13,574)												
Detailed Plans	34.7	43.9	22.9	48.6	23.9	40.1	32.2	50.0	17.9	40.8	30.6	44.4
General Plans	60.7	55.3	71.3	50.2	66.1	59.1	62.0	47.5	78.1	55.9	62.8	50.7
Students' Interests/Needs	4.5	0.8	5.8	1.2	10.0	0.8	5.7	2.5	4.0	3.3	6.5	4.9

NOTE: Ns above each column indicate the total number of students in a column (all grades combined).

Ns under each grade column indicate the total number of students in each grade, for reading (R) and for math (M), all CE categories combined.

Sample size for each selection category by grade is available in Table 4-18.

Table 4-20

Percentages of Students Whose Teachers Report that Instruction Varies Among Students for Reading and Math Instruction

Type of Instructional Variability	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	Reading (N=9,566)	Math (N=5,889)	Reading (N=4,235)	Math (N=3,782)	Reading (N=3,388)	Math (N=2,117)	Reading (N=35,465)	Math (N=39,658)	Reading (N=17,483)	Math (N=17,967)	Reading (N=7,939)	Math (N=7,836)
Grade 1 (R N=14,495) (M N=14,163)												
Total time in reading/math	32.7	33.6	37.6	23.9	21.9	22.8	31.7	22.0	25.5	18.2	40.4	26.9
Instructional objectives	58.1	53.1	65.2	43.2	50.0	49.2	52.8	32.5	50.9	32.7	48.4	27.1
Sequence of activities	49.9	52.9	47.2	26.7	42.9	38.2	48.1	32.4	44.8	22.4	45.8	29.4
Expected rate of progress	92.4	91.0	94.2	86.8	97.5	99.5	95.0	82.7	97.1	90.2	92.9	89.7
Teaching method	75.1	61.4	69.3	52.1	71.7	72.3	72.0	54.3	71.5	61.9	66.9	57.4
Types of materials	65.9	59.6	49.6	39.8	55.0	48.4	61.5	41.0	56.5	43.3	62.0	47.8
Grade 2 (R N=12,890) (M N=12,545)												
Total time in reading/math	34.5	34.5	29.3	18.6	22.3	31.8	27.9	23.1	21.2	20.8	30.0	18.8
Instructional objectives	62.2	50.5	59.2	38.4	60.2	47.0	56.4	33.3	40.5	25.9	57.9	37.7
Sequence of activities	57.9	36.3	54.3	29.9	52.4	39.9	51.3	26.0	45.5	26.8	59.7	28.7
Expected rate of progress	94.5	91.1	95.1	88.8	94.8	99.6	94.2	84.5	91.7	84.4	89.0	82.8
Teaching method	71.4	64.5	73.6	64.0	88.2	66.4	68.3	53.2	82.5	55.5	77.5	43.8
Types of materials	69.6	54.5	73.9	54.7	86.3	50.9	65.1	40.2	77.7	49.6	76.9	42.4
Grade 3 (R N=12,598) (M N=12,438)												
Total time in reading/math	33.4	32.1	33.5	16.9	32.4	47.7	33.6	25.7	22.8	15.8	39.7	27.9
Instructional objectives	58.9	47.2	54.6	36.1	66.0	50.1	55.3	36.1	54.9	32.3	51.7	37.9
Sequence of activities	54.2	41.5	52.4	29.6	54.0	46.0	51.3	34.2	41.1	24.3	62.0	42.7
Expected rate of progress	91.6	90.7	95.6	92.6	91.6	83.1	92.0	86.6	83.2	78.7	94.5	86.2
Teaching method	72.8	64.4	86.0	59.9	73.2	67.6	72.8	51.7	62.9	52.0	51.7	56.9
Types of materials	70.6	56.2	70.7	42.5	73.2	52.3	65.6	44.1	61.3	34.2	63.3	45.8
Grade 4 (R N=12,213) (M N=11,694)												
Total time in reading/math	27.6	27.9	29.6	41.1	38.7	28.5	23.6	25.6	22.7	16.9	35.4	28.4
Instructional objectives	64.6	48.5	73.0	50.3	64.2	48.0	53.6	36.0	53.5	31.3	44.7	35.2
Sequence of activities	57.8	40.3	68.2	54.7	64.0	52.9	46.8	33.1	52.5	26.6	44.7	48.7
Expected rate of progress	91.9	82.5	94.8	86.2	89.3	82.3	91.0	85.5	87.8	82.8	92.0	90.4
Teaching method	70.4	52.5	77.4	62.2	69.7	67.9	67.9	54.9	60.9	51.3	69.2	63.4
Types of materials	67.6	47.5	72.5	64.6	64.2	58.3	61.8	47.5	53.9	37.0	74.2	59.0
Grade 5 (R N=12,316) (M N=11,945)												
Total time in reading/math	26.1	29.3	28.5	49.6	34.9	27.5	28.5	19.5	21.0	14.0	33.8	29.8
Instructional objectives	63.2	49.9	62.4	60.6	56.7	51.8	54.0	41.6	43.0	32.3	46.8	40.0
Sequence of activities	55.8	46.0	53.2	45.2	53.8	49.2	46.2	38.8	36.0	31.9	49.7	41.2
Expected rate of progress	89.4	90.1	83.2	80.2	94.3	93.2	88.1	84.6	86.8	82.2	87.6	87.7
Teaching method	73.3	67.1	70.0	64.4	76.1	60.4	70.3	57.0	55.7	58.1	68.9	60.7
Types of materials	63.2	51.4	65.6	59.0	72.8	71.2	58.9	44.9	55.9	58.8	62.9	59.7
Grade 6 (R N=13,496) (M N=13,574)												
Total time in reading/math	39.5	33.1	16.4	34.5	22.3	22.5	28.0	22.1	15.2	13.6	20.7	27.9
Instructional objectives	62.8	53.2	51.0	45.0	69.7	60.2	49.6	41.6	49.3	26.6	43.0	40.0
Sequence of activities	61.2	56.6	38.2	67.2	72.4	46.0	44.9	41.2	53.5	37.9	42.7	37.2
Expected rate of progress	85.3	89.5	84.7	94.2	86.3	86.9	88.9	84.8	89.7	77.1	92.2	88.5
Teaching method	68.5	71.8	61.6	67.7	69.3	59.9	60.3	55.9	59.0	54.2	58.6	49.6
Types of materials	69.8	64.4	66.1	68.0	60.7	48.9	55.3	46.0	63.1	44.5	55.2	46.7

NOTE: Ns above each column indicate the total number of students in a column (all grades combined).
Ns under each grade column indicate the total number of students in each grade, for reading (R) for math (M), all CE categories combined.
Sample size for each selection category by grade is available in Table 4-18.

Table 4-21

Percentages of Students Whose Teachers Use Various Types of Content for Reading and Math Instruction

Type of Content	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	Reading (N=9,065)	Math (N=4,544)	Reading (N=3,926)	Math (N=3,226)	Reading (N=3,053)	Math (N=1,930)	Reading (N=32,593)	Math (N=34,856)	Reading (N=16,218)	Math (N=15,906)	Reading (N=7,399)	Math (N=7,059)
Grade 1 (R N=13,193) (M N=12,204)												
Approved curriculum	47.9	48.5	36.6	34.1	26.1	18.0	48.1	53.5	43.3	55.0	48.6	51.1
Content based on needs	9.6	9.5	8.4	16.1	21.9	20.9	7.8	6.7	8.4	3.3	3.7	5.6
Curriculum and needs	42.4	41.9	55.0	49.8	52.0	61.1	44.1	39.8	48.2	41.7	47.7	43.3
Grade 2 (R N=11,828) (M N=11,073)												
Approved curriculum	44.3	45.6	31.6	26.3	34.1	38.7	48.0	49.6	46.2	50.3	42.9	62.0
Content based on needs	8.3	8.9	9.4	24.2	15.1	32.0	5.8	6.5	9.0	4.5	2.3	4.2
Curriculum and needs	47.4	45.5	59.0	49.5	50.8	29.2	46.3	43.9	44.8	45.2	54.9	33.9
Grade 3 (R N=11,547) (M N=11,021)												
Approved curriculum	30.6	31.3	31.1	31.9	23.6	17.6	42.9	47.7	42.9	39.0	48.0	47.9
Content based on needs	18.3	22.9	24.3	30.4	23.2	25.5	12.3	6.6	6.3	9.8	13.4	10.5
Curriculum and needs	51.0	45.8	44.6	37.6	53.1	56.8	44.8	45.7	50.8	51.2	38.6	41.6
Grade 4 (R N=11,337) (M N=10,465)												
Approved curriculum	30.3	30.8	27.3	29.6	26.4	27.1	34.8	41.2	43.3	44.9	40.3	37.7
Content based on needs	24.7	16.9	16.7	10.6	15.5	39.6	11.5	11.5	6.7	7.4	24.7	10.1
Curriculum and needs	45.0	52.3	56.0	59.8	58.1	33.3	53.7	47.3	50.0	47.7	35.0	52.1
Grade 5 (R N=11,592) (M N=10,498)												
Approved curriculum	26.4	26.9	16.8	36.0	27.7	18.3	42.4	41.0	38.4	36.1	37.4	38.4
Content based on needs	23.3	25.1	11.7	11.5	19.4	33.6	15.4	13.0	12.3	5.0	20.4	21.0
Curriculum and needs	50.3	47.9	71.6	52.4	52.8	48.1	42.2	46.0	49.4	59.0	42.2	40.6
Grade 6 (R N=12,757) (M N=12,260)												
Approved curriculum	20.1	20.8	22.6	25.4	17.4	22.9	40.9	41.8	31.3	40.7	37.1	47.2
Content based on needs	30.5	42.2	19.8	28.0	42.3	39.7	15.9	15.1	13.2	8.3	19.9	6.9
Curriculum and needs	49.4	37.0	57.7	46.6	40.3	37.4	43.2	43.1	55.5	51.0	43.0	45.9

NOTE: Ns above each column indicate the total number of students in a column (all grades combined).
Ns under each grade column indicate the total number of students in each grade, for reading (R) and for math (M), all CE categories combined.
Sample size for each selection category by grade is available in Table 4-18.

is less frequent for CE students. Thus, in math there appears to be more emphasis on identifying individual needs and teaching to those needs for CE students than for non-CE students.

Finally, we turn to the specific learning activities on which students spend their time in reading and math. Tables 4-22 through 4-27 for reading, and 4-28 through 4-33 for math present the mean frequency ratings for each activity, for each category, of students, by grade. In reading, as might be expected, the basic-skill activities (letter-sound correspondence, identifying and writing letters, blending sounds and oral reading) are most frequent in the lower grades, while comprehension, using context clues, reference materials, and syllabification are most frequent in the upper grades. There are, however, some differences among the student selection categories on these items: in grades 5 and 6 there is more emphasis on basic skill activities for CE students than for non-CE students.

Turning to the math activities, in most grades, reviewing computational skills, learning about fundamental operations, and learning the vocabulary of mathematics are the most frequent activities. However, in grade 1, the two activities rated highest are learning about number sentences and learning about sets. There are no substantial differences in the math activities attributable to student selection category.

Feedback Provided to Students. Teachers were asked how frequently they provide feedback to their students in the form of (1) a letter or number grade, (2) information about particular strengths, and (3) information about particular weaknesses. The possible responses were: daily (coded as 90 times per semester), two or three times a week (coded as 50 times per semester), about once a week (20 times per semester), about every two weeks (10 times per semester), about once a month (5 times per semester), two or three times a semester (2 times per semester), and never (0 times per semester). Tables 4-34 and 4-35 present the mean number of times per semester that students receive feedback in each form. As may be seen, the frequencies are generally fairly high for all types of feedback (on the order of once or twice a week). There is some tendency for reading teachers to provide feedback to students less often in the upper grades. For reading in the lower grades, feedback about particular strengths and weaknesses is more common than feedback in the form of grades. However, this distinction disappears in the upper grades. There is no similar pattern in math. Variations in frequency of feedback do not appear to be related to the student selection category for either reading or math.

Amount of Homework. Teacher responses concerning the amount of homework assigned in an average week were linked to student-level records separately for regular and low-achieving students. The mean number of hours assigned per student for reading and math are presented in Table 4-36. As may be seen, reading homework typically amounts to less than an hour per week, with slightly more homework assigned in the upper grades. Homework for math tends to be assigned more than for reading except for grades 1 and 2. There are, however, no substantial differences in homework assigned across the student selection categories.

Use of Special Equipment. This analysis involved a composite usage variable based on two items from the Teacher Questionnaire. These items deal with the monthly frequency with

Table 4-22

Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 1

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	(N=1,582)		(N=804)		(N=517)		(N=6,494)		(N=2,722)		(N=1,249)	
Reading Activity	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Identifying and practicing letter-sound correspondence	4.84	0.54	4.76	0.66	4.82	0.68	4.81	0.62	4.80	0.61	4.77	0.62
Identifying and writing letters or groups of letters	4.67	0.78	4.72	0.73	4.57	0.81	4.56	0.92	4.60	0.83	4.62	0.83
Blending the sounds letters stand for to form words	4.52	1.02	4.64	0.81	4.73	0.70	4.53	0.99	4.71	0.80	4.66	0.75
Learning and practicing sight words	4.28	1.17	4.26	1.16	4.31	1.06	4.53	0.85	4.50	0.89	4.16	1.19
Dividing words into syllables	2.03	1.33	2.23	1.25	2.78	1.69	2.15	1.31	2.26	1.38	2.56	1.37
Using context clues to gain understanding	3.57	1.37	3.59	1.34	4.15	1.02	3.99	1.17	4.23	0.98	4.08	1.02
Answering questions on comprehension	4.22	1.01	4.36	0.85	4.37	0.80	4.51	0.84	4.53	0.88	4.32	0.91
Reading and writing stories created by self or other students	2.43	1.33	2.26	1.26	2.91	1.50	2.57	1.27	2.79	1.28	2.77	1.37
Reading texts orally	4.35	1.10	4.49	1.05	4.74	0.74	4.60	0.85	4.54	0.94	4.59	0.80
Answering comprehension questions and timed readings	1.83	1.27	1.96	1.36	2.10	1.37	1.84	1.25	1.82	1.31	1.94	1.30
Alphabetizing	2.25	1.34	2.06	1.22	2.56	1.57	2.23	1.25	2.01	1.19	2.62	1.44
Using reference materials	1.70	1.08	1.51	0.96	1.77	0.98	1.76	1.11	1.71	0.99	2.14	1.17

Table 4-23

Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 2

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	(N=1,749)		(N=796)		(N=584)		(N=5,346)		(N=2,403)		(N=1,108)	
Reading Activity	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Identifying and practicing letter-sound correspondence	4.55	0.92	4.37	1.15	4.55	0.95	4.38	1.06	4.41	1.06	4.19	1.05
Identifying and writing letters or groups of letters	4.19	1.16	3.95	1.37	4.19	1.10	3.96	1.25	4.04	1.33	3.95	1.36
Blending the sounds letters stand for to form words	4.54	0.87	4.46	1.04	4.58	0.87	4.45	0.92	4.41	1.12	4.44	1.13
Learning and practicing sight words	4.29	1.12	4.42	1.01	4.38	0.99	4.28	1.11	4.21	1.22	4.18	1.21
Dividing words into syllables	3.28	1.38	3.44	1.46	3.55	1.37	3.42	1.35	3.81	1.28	3.49	1.13
Using context clues to gain understanding	4.07	1.15	4.15	1.15	4.35	0.90	4.10	1.13	4.38	0.91	4.10	1.17
Answering questions on comprehension	4.53	0.89	4.52	0.79	4.61	0.89	4.49	0.94	4.67	0.82	4.50	0.91
Reading and writing stories created by self or other students	2.97	1.23	2.92	1.21	3.44	1.35	2.97	1.19	3.63	1.14	3.60	1.21
Reading texts orally	4.45	1.03	4.70	0.81	4.49	1.06	4.42	0.98	4.50	0.84	4.17	1.10
Answering comprehension questions and timed readings	2.24	1.36	2.03	1.19	2.67	1.64	2.24	1.37	2.75	1.60	2.11	1.30
Alphabetizing	3.38	1.21	3.33	1.18	3.91	1.14	3.62	1.16	3.83	1.10	3.23	1.11
Using reference materials	2.55	1.27	2.37	1.16	2.78	1.22	2.70	1.26	2.84	1.31	2.67	1.29

Table 4-24

Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 3

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	(N=1,814)		(N=692)		(N=533)		(N=5,070)		(N=2,401)		(N=1,150)	
Reading Activity	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Identifying and practicing letter-sound correspondence	4.31	1.11	4.05	1.20	4.27	1.19	3.86	1.32	3.69	1.42	3.73	1.47
Identifying and writing letters or groups of letters	3.97	1.32	4.08	1.20	4.11	1.34	3.55	1.47	3.53	1.46	3.13	1.57
Blending the sounds letters stand for to form words	4.40	1.01	4.19	1.07	4.35	1.11	4.02	1.22	3.94	1.30	4.19	1.01
Learning and practicing sight words	4.32	1.03	4.15	0.97	4.04	1.24	3.90	1.17	3.80	1.35	4.22	0.97
Dividing words into syllables	3.52	1.27	3.49	1.29	3.57	1.36	3.95	1.19	3.90	1.29	3.87	1.04
Using context clues to gain understanding	4.02	1.09	4.03	1.11	4.26	1.02	4.20	1.05	4.28	1.05	4.32	0.79
Answering questions on comprehension	4.40	1.00	4.45	0.95	4.28	1.17	4.51	0.96	4.51	0.85	4.68	0.61
Reading and writing stories created by self or other students	2.78	1.21	3.06	1.16	3.22	1.36	2.99	1.19	3.48	1.18	3.33	1.25
Reading texts orally	4.29	0.98	4.13	1.14	4.30	1.08	4.16	1.10	4.08	1.13	4.22	0.91
Answering comprehension questions and timed readings	2.33	1.39	2.62	1.51	2.27	1.39	2.40	1.36	2.55	1.40	2.43	1.45
Alphabetizing	3.59	1.17	3.82	1.01	3.81	1.26	3.71	1.11	3.92	1.23	3.69	1.15
Using reference materials	2.93	1.47	3.02	1.26	2.77	1.29	3.38	1.28	3.52	1.28	3.22	1.25

Table 4-25

Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 4

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	(N=1,497)		(N=634)		(N=516)		(N=5,309)		(N=2,417)		(N=1,124)	
Reading Activity	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Identifying and practicing letter-sound correspondence	3.99	1.33	3.67	1.39	3.74	1.40	3.53	1.43	3.26	1.43	3.73	1.34
Identifying and writing letters or groups of letters	3.50	1.46	3.26	1.50	3.35	1.36	3.13	1.45	2.95	1.45	3.09	1.42
Blending the sounds letters stand for to form words	4.10	1.20	3.83	1.29	3.78	1.28	3.61	1.33	3.40	1.27	3.63	1.40
Learning and practicing sight words	4.00	1.30	3.91	1.23	3.55	1.33	3.63	1.37	3.13	1.34	3.32	1.46
Dividing words into syllables	3.74	1.24	3.58	1.24	3.64	1.31	3.87	1.14	3.78	1.14	4.01	1.09
Using context clues to gain understanding	3.99	1.09	4.15	0.87	4.10	1.12	4.26	1.02	4.23	0.93	4.34	0.92
Answering questions on comprehension	4.31	1.02	4.41	0.87	4.32	1.02	4.54	0.87	4.50	0.94	4.37	1.02
Reading and writing stories created by self or other students	2.87	1.28	2.97	1.19	2.83	1.23	2.97	1.17	2.92	1.22	3.19	1.20
Reading texts orally	4.06	1.20	3.99	1.33	3.87	1.21	3.82	1.23	3.72	1.17	3.61	1.24
Answering comprehension questions and timed readings	2.46	1.42	2.16	1.26	2.42	1.36	2.59	1.46	2.44	1.33	2.82	1.25
Alphabetizing	3.66	1.17	3.76	0.99	3.56	1.23	3.48	1.13	3.48	1.19	3.41	1.09
Using reference materials	3.37	1.33	3.46	1.22	3.36	1.28	3.75	1.18	3.79	1.10	3.67	1.18

Table 4-26

Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 5

	Title I Students in Title I Schools (N=1,336)		Other-CE Students in Title I Schools (N=531)		Other-CE Students in Other-CE Schools (N=533)		Non-CE Students in Title I Schools (N=5,385)		Non-CE Students in Other-CE Schools (N=2,607)		Non-CE Students in Non-CE Schools (N=1,250)	
Reading Activity	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Identifying and practicing letter-sound correspondence	3.86	1.21	3.47	1.43	3.68	1.44	3.14	1.39	2.84	1.42	3.29	1.57
Identifying and writing letters or groups of letters	3.25	1.37	3.31	1.32	3.34	1.49	2.65	1.40	2.42	1.43	2.89	1.52
Blending the sounds letters stand for to form words	3.96	1.22	3.52	1.30	3.71	1.36	3.31	1.35	2.94	1.26	3.25	1.44
Learning and practicing sight words	3.84	1.27	3.65	1.23	3.62	1.41	3.27	1.44	3.06	1.47	3.42	1.55
Dividing words into syllables	3.87	1.08	3.77	1.08	3.85	1.22	3.85	1.02	3.63	1.13	3.76	1.25
Using context clues to gain understanding	4.08	1.02	4.05	1.02	4.31	0.84	4.29	0.94	4.31	0.89	4.14	1.18
Answering questions on comprehension	4.38	0.96	4.47	0.97	4.52	0.72	4.54	0.84	4.66	0.72	4.41	1.03
Reading and writing stories created by self or other students	3.12	1.28	2.85	1.22	3.08	1.35	3.20	1.22	3.35	1.34	3.40	1.31
Reading texts orally	3.77	1.24	3.42	1.26	4.04	1.04	3.64	1.20	3.79	1.03	3.83	1.03
Answering comprehension questions and timed readings	2.51	1.38	2.18	1.27	2.50	1.50	2.63	1.42	2.72	1.42	2.77	1.52
Alphabetizing	3.59	1.21	3.36	1.15	3.53	1.27	3.24	1.13	3.13	1.13	3.27	1.32
Using reference materials	3.70	1.16	3.69	1.18	3.67	1.15	3.99	1.05	3.90	1.04	4.04	0.97

Table 4-27

Frequency of Various Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 6

Reading Activity	Title I Students in Title I Schools (N=1,086)		Other-CE Students in Title I Schools (N=505)		Other-CE Students in Other-CE Schools (N=471)		Non-CE Students in Title I Schools (N=5,241)		Non-CE Students in Other-CE Schools (N=3,953)		Non-CE Students in Non-CE Schools (N=1,619)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Identifying and practicing letter-sound correspondence	3.79	1.32	3.40	1.47	3.75	1.49	2.79	1.29	2.63	1.36	2.77	1.47
Identifying and writing letters or groups of letters	3.35	1.49	3.13	1.57	3.34	1.57	2.50	1.30	2.37	1.27	2.72	1.52
Blending the sounds letters stand for to form words	3.82	1.31	3.55	1.39	3.95	1.20	2.83	1.30	2.84	1.17	2.93	1.34
Learning and practicing sight words	3.76	1.20	3.60	1.25	3.65	1.46	3.13	1.39	2.96	1.36	2.95	1.44
Dividing words into syllables	4.00	0.96	3.99	1.04	3.79	1.19	3.62	1.03	3.61	1.07	3.36	1.32
Using context clues to gain understanding	4.08	0.96	4.03	1.14	4.24	1.18	4.17	0.90	4.51	0.85	4.11	0.97
Answering questions on comprehension	4.41	0.88	4.61	0.65	4.56	0.88	4.50	0.81	4.63	0.92	4.28	1.00
Reading and writing stories created by self or other students	2.94	1.16	3.01	1.26	2.86	1.37	3.11	1.30	2.95	1.36	2.93	1.34
Reading texts orally	3.80	1.25	3.90	1.29	3.77	1.28	3.45	1.14	3.32	1.22	3.58	1.31
Answering comprehension questions and timed readings	2.53	1.22	2.59	1.38	2.60	1.46	2.39	1.23	2.63	1.40	2.90	1.44
Alphabetizing	3.70	1.19	3.38	1.11	3.45	1.26	2.94	1.18	2.79	1.04	2.87	1.33
Using reference materials	3.73	1.16	4.01	1.04	3.65	1.31	3.95	1.13	3.97	1.05	3.91	1.10

Table 4-28

Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 1

	Title I Students in Title I Schools (N=833)		Other-CE Students in Title I Schools (N=719)		Other-CE Students in Other-CE Schools (N=349)		Non-CE Students in Title I Schools (N=7,138)		Non-CE Students in Other-CE Schools (N=2,734)		Non-CE Students in Non-CE Schools (N=1,212)	
Math Activities	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Learning math vocabulary	3.40	1.31	3.67	1.23	3.99	0.83	3.80	1.16	3.84	0.99	3.78	1.16
Solving word problems	2.10	1.12	2.08	1.23	2.69	1.40	2.39	1.30	2.17	1.24	2.59	1.50
Learning symbols	3.81	1.26	3.90	1.16	4.21	0.85	4.19	1.06	4.24	0.96	4.12	1.09
Learning properties and axioms	2.20	1.26	2.06	1.32	2.28	1.16	2.24	1.40	2.08	1.36	2.18	1.40
Learning about number sentences	3.80	1.46	4.08	1.14	4.02	1.31	4.26	1.11	4.29	1.15	4.49	0.87
Learning about sets	4.18	1.25	4.22	0.97	4.32	0.86	4.12	1.19	4.36	1.01	4.26	1.04
Learning geometric concepts	2.76	1.26	2.67	1.22	3.00	1.45	2.76	1.27	2.68	1.19	2.94	1.29
Learning about measurement	2.38	1.22	2.48	1.15	2.76	1.21	2.59	1.21	2.49	1.07	2.83	1.19
Learning about number theory	1.70	1.10	1.38	0.79	1.92	1.38	1.55	1.06	1.47	1.08	1.56	1.06
Learning about fundamental operations	3.80	1.57	4.21	1.37	4.02	1.43	3.87	1.53	4.21	1.33	3.97	1.44
Learning about structure of number systems	2.75	1.46	2.30	1.61	3.19	1.75	2.87	1.52	2.96	1.66	3.00	1.45
Reviewing computational skills	3.58	1.63	4.32	1.10	4.47	1.08	3.91	1.44	4.47	1.11	3.81	1.49
Working with math games	3.54	1.25	3.71	1.24	3.96	1.22	3.58	1.13	3.62	1.22	3.95	1.04
Working with physical models	2.56	1.43	2.61	1.52	3.73	1.43	2.80	1.42	3.18	1.56	2.74	1.58

Table 4-29

Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 2

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	(N=855)		(N=580)		(N=269)		(N=6,365)		(N=2,498)		(N=1,067)	
Math Activities	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Learning math vocabulary	3.93	1.00	3.65	0.91	4.17	0.99	3.61	1.12	3.86	1.13	3.55	0.98
Solving word problems	3.16	1.20	3.17	1.07	3.72	1.00	3.32	1.16	3.45	0.93	3.39	1.10
Learning symbols	3.91	1.11	3.69	1.06	4.23	0.93	3.68	1.09	3.83	1.13	3.69	1.22
Learning properties and axioms	2.52	1.34	2.26	1.26	2.33	1.34	2.30	1.31	2.53	1.33	2.47	1.43
Learning about number sentences	4.14	1.07	4.16	0.82	4.09	0.80	4.14	1.05	4.22	0.93	4.12	1.07
Learning about sets	3.75	1.34	3.52	1.44	4.31	0.98	3.58	1.29	3.84	1.25	3.75	1.25
Learning geometric concepts	2.74	1.16	2.89	1.14	3.30	1.32	2.56	1.13	2.95	0.96	2.83	1.09
Learning about measurement	2.77	1.16	2.76	1.13	3.38	1.05	2.64	1.07	3.13	1.03	2.96	1.07
Learning about number theory	2.08	1.37	1.80	1.05	2.32	1.39	1.74	1.21	1.95	1.26	1.93	1.32
Learning about fundamental operations	4.26	1.15	4.12	1.31	4.08	1.36	4.12	1.26	4.50	0.96	4.17	1.10
Learning about structure of number systems	3.26	1.44	3.04	1.34	3.19	1.33	2.75	1.37	3.24	1.32	2.77	1.53
Reviewing computational skills	4.28	1.03	4.62	0.88	4.41	1.13	4.19	1.25	4.59	0.79	4.46	0.89
Working with math games	3.70	1.18	3.70	0.97	4.04	1.01	3.41	1.14	3.72	0.99	3.40	1.10
Working with physical models	2.78	1.38	2.66	1.23	3.02	1.14	2.51	1.25	2.95	1.17	2.83	1.38

Table 4-30

Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 3

	Title I Students in Title I Schools (N=953)		Other-CE Students in Title I Schools (N=507)		Other-CE Students in Other-CE Schools (N=349)		Non-CE Students in Title I Schools (N=6,125)		Non-CE Students in Other-CE Schools (N=2,519)		Non-CE Students in Non-CE Schools (N=1,129)	
Math Activities	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Learning math vocabulary	3.61	1.06	3.34	1.11	4.03	0.91	3.63	1.04	3.78	1.12	3.67	1.02
Solving word problems	3.22	1.16	3.31	1.04	3.86	1.01	3.32	1.05	3.66	1.07	3.46	0.97
Learning symbols	3.63	1.12	3.27	1.16	3.85	1.11	3.50	1.10	3.65	1.10	3.59	1.25
Learning properties and axioms	2.36	1.18	2.07	1.13	2.34	1.18	2.41	1.18	2.52	1.27	2.56	1.46
Learning about number sentences	3.62	1.18	3.71	0.97	3.60	1.05	3.72	1.13	3.90	1.02	3.88	0.98
Learning about sets	3.57	1.23	3.71	0.95	3.45	1.21	3.28	1.31	3.51	1.25	3.65	1.13
Learning geometric concepts	2.62	1.22	2.80	1.03	2.47	1.33	2.53	1.17	2.34	1.12	2.88	1.14
Learning about measurement	2.85	1.15	3.15	1.15	3.09	1.10	2.81	1.14	2.71	1.12	3.10	1.12
Learning about number theory	2.38	1.32	2.13	1.22	2.21	1.37	2.35	1.40	2.51	1.49	2.28	1.38
Learning about fundamental operations	4.31	1.06	4.27	0.91	4.11	1.20	4.22	1.12	4.20	1.25	4.22	1.25
Learning about structure of number systems	3.14	1.39	3.27	1.37	2.92	1.37	2.99	1.35	3.08	1.33	2.98	1.47
Reviewing computational skills	4.41	1.02	4.32	0.92	4.50	0.81	4.44	0.95	4.47	0.93	4.55	0.80
Working with math games	3.47	1.16	3.52	0.99	3.73	1.13	3.33	1.09	3.37	1.15	3.60	1.10
Working with physical models	2.67	1.26	2.38	0.96	2.76	1.27	2.41	1.16	2.40	1.23	2.81	1.36

Table 4-31

Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 4

	Title I Students in Title I Schools (N=811)		Other-CE Students in Title I Schools (N=583)		Other-CE Students in Other-CE Schools (N=326)		Non-CE Students in Title I Schools (N=5,717)		Non-CE Students in Other-CE Schools (N=2,412)		Non-CE Students in Non-CE Schools (N=1,134)	
Math Activities	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Learning math vocabulary	3.40	1.15	3.33	1.14	3.90	1.04	3.45	1.09	3.68	1.02	3.68	1.16
Solving word problems	3.40	1.09	3.34	1.03	3.86	1.07	3.50	1.08	3.39	1.05	3.40	1.16
Learning symbols	3.35	1.07	3.31	1.18	3.65	1.27	3.43	1.05	3.33	1.16	3.47	1.15
Learning properties and axioms	2.29	1.17	2.17	1.18	2.47	1.23	2.46	1.25	2.80	1.26	2.90	1.33
Learning about number sentences	3.57	1.17	3.28	1.30	3.56	1.25	3.55	1.12	3.46	1.23	3.45	0.98
Learning about sets	3.05	1.26	2.65	1.22	3.24	1.23	2.83	1.26	2.77	1.27	2.82	1.25
Learning geometric concepts	2.40	1.17	2.36	1.09	2.87	1.27	2.35	1.23	2.51	1.20	2.49	1.12
Learning about measurement	2.84	1.24	3.11	0.95	3.11	1.38	2.72	1.16	2.66	1.13	2.71	0.97
Learning about number theory	2.51	1.26	2.11	1.21	2.84	1.44	2.59	1.36	2.61	1.29	2.80	1.32
Learning about fundamental operations	4.37	0.96	4.38	0.94	4.02	1.28	4.39	1.00	4.32	1.08	4.25	1.31
Learning about structure of number systems	3.38	1.38	2.98	1.41	3.63	1.27	3.05	1.33	3.08	1.35	3.32	1.26
Reviewing computational skills	4.53	0.84	4.53	0.73	4.46	0.90	4.44	0.95	4.46	0.92	4.44	1.10
Working with math games	3.39	1.18	3.42	1.03	3.84	1.08	3.29	1.14	3.03	1.00	3.09	1.29
Working with physical models	2.47	1.29	2.53	1.24	2.58	1.14	2.34	1.15	2.10	1.01	2.34	1.16

Table 4-32

Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 5

	Title I Students in Title I Schools (N=782)		Other-CE Students in Title I Schools (N=451)		Other-CE Students in Other-CE Schools (N=385)		Non-CE Students in Title I Schools (N=5,720)		Non-CE Students in Other-CE Schools (N=2,735)		Non-CE Students in Non-CE Schools (N=1,208)	
Math Activities	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Learning math vocabulary	3.71	1.00	3.27	1.15	3.60	1.21	3.50	1.08	3.39	1.17	4.11	0.96
Solving word problems	3.15	1.17	3.08	1.15	3.30	1.20	3.34	1.06	3.15	1.08	3.58	1.12
Learning symbols	3.26	1.23	3.27	0.91	3.33	1.15	3.41	1.09	3.12	1.10	3.84	0.99
Learning properties and axioms	2.35	1.15	2.38	1.15	2.21	1.07	2.51	1.18	2.60	1.12	3.07	1.29
Learning about number sentences	2.99	1.33	2.98	1.02	3.11	1.26	3.16	1.14	2.99	1.13	3.45	1.25
Learning about sets	2.59	1.23	2.54	1.22	3.07	1.32	2.61	1.19	2.55	1.20	2.94	1.41
Learning geometric concepts	2.54	1.17	2.64	0.99	2.56	1.26	2.48	1.25	2.49	1.16	3.01	1.26
Learning about measurement	2.84	1.10	3.37	1.19	2.47	1.22	2.76	1.19	2.64	1.12	3.31	1.21
Learning about number theory	2.68	1.32	3.24	1.51	2.72	1.47	2.82	1.35	2.94	1.29	3.09	1.40
Learning about fundamental operations	4.34	1.02	4.44	0.99	4.39	1.07	4.42	0.97	4.27	1.15	4.55	0.82
Learning about structure of number systems	2.98	1.38	3.42	1.43	2.82	1.30	2.96	1.28	2.98	1.16	3.45	1.34
Reviewing computational skills	4.23	1.21	4.56	0.91	4.28	1.25	4.41	0.95	4.31	1.11	4.58	0.74
Working with math games	3.11	1.21	3.35	1.19	3.51	1.24	2.91	1.06	2.89	1.08	3.05	1.20
Working with physical models	2.46	1.26	2.59	1.38	2.56	1.27	2.14	1.12	2.20	1.13	2.45	1.38

Table 4-33

Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) for Students in Grade 6

	Title I Students in Title I Schools (N=594)		Other-CE Students in Title I Schools (N=626)		Other-CE Students in Other-CE Schools (N=363)		Non-CE Students in Title I Schools (N=5,733)		Non-CE Students in Other-CE Schools (N=4,046)		Non-CE Students in Non-CE Schools (N=1,578)	
Math Activities	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Learning math vocabulary	3.61	0.98	3.09	1.10	3.57	1.27	3.35	1.09	3.71	1.11	3.63	1.05
Solving word problems	3.22	1.08	3.30	1.10	3.39	1.18	3.25	0.98	3.22	1.04	3.24	0.98
Learning symbols	3.18	0.81	3.38	0.92	3.43	1.32	3.36	1.01	3.40	1.03	3.22	1.10
Learning properties and axioms	2.67	0.88	2.47	1.01	2.33	1.25	2.73	1.12	2.52	1.21	2.55	1.23
Learning about number sentences	3.19	1.05	2.77	0.99	3.27	1.40	3.16	1.00	2.98	1.16	2.83	1.24
Learning about sets	2.85	1.05	2.49	1.29	2.92	1.45	2.60	1.12	2.13	1.20	2.32	1.26
Learning geometric concepts	2.81	1.14	2.40	1.32	2.60	1.47	2.63	1.22	2.26	1.34	2.28	1.32
Learning about measurement	3.12	1.06	3.37	1.01	2.76	1.31	3.00	1.16	2.80	1.35	2.57	1.44
Learning about number theory	3.23	1.22	3.01	1.36	2.72	1.52	3.30	1.30	3.23	1.44	3.09	1.36
Learning about fundamental operations	4.31	0.92	4.24	1.01	4.19	1.26	4.41	0.93	4.57	0.93	4.22	0.95
Learning about structure of number systems	3.19	1.17	2.80	1.36	3.20	1.37	3.01	1.19	3.08	1.27	3.03	1.47
Reviewing computational skills	4.42	0.84	4.57	0.91	4.42	0.96	4.24	0.95	4.54	0.91	4.28	0.80
Working with math games	3.33	1.01	3.30	1.04	3.22	1.28	2.84	1.07	2.73	1.13	2.78	1.18
Working with physical models	2.70	1.24	2.46	1.29	2.67	1.34	2.22	1.16	2.22	1.18	2.15	1.26

Table 4-34

Number of Times per Semester Reading Students Receive Feedback, by Grade and Selection Category

Type of Feedback	Title I Students in Title I Schools			Other-CE Students in Title I Schools			Other-CE Students in Other-CE Schools			Non-CE Students in Title I Schools			Non-CE Students in Other-CE Schools			Non-CE Students in Non-CE Schools		
	Mean	S. D.	N	Mean	S. D.	N	Mean	S. D.	N	Mean	S. D.	N	Mean	S. D.	N	Mean	S. D.	N
Grade 1																		
Grade	31.81	39.65	1,720	26.67	37.55	861	28.67	39.04	562	34.23	39.89	7,071	36.17	41.52	2,935	32.99	39.46	1,346
Strengths	47.88	35.53	1,720	49.99	37.11	861	51.47	36.73	562	48.10	34.79	7,071	51.99	36.32	2,935	40.85	34.41	1,346
Weaknesses	41.54	34.59	1,720	44.83	37.79	861	45.01	34.65	562	44.42	33.83	7.071	48.41	35.90	2,935	35.42	32.01	1,346
Grade 2																		
Grade	35.93	38.70	1,845	26.87	35.79	857	32.15	37.47	620	33.65	37.47	5,802	46.45	42.25	2,578	33.14	36.67	1,188
Strengths	46.12	35.85	1,845	47.05	35.35	857	48.62	34.38	620	45.11	34.99	5,802	48.16	33.99	2,578	40.95	32.97	1,188
Weaknesses	46.08	35.65	1,845	47.69	35.43	857	43.49	32.85	620	43.12	34.93	5,802	45.59	34.77	2,578	36.89	31.05	1,188
Grade 3																		
Grade	35.25	34.64	1,900	30.07	33.49	743	32.56	35.82	559	34.56	33.92	5,576	37.71	36.67	2,571	37.50	37.44	1,249
Strengths	42.64	31.99	1,900	41.74	32.43	743	42.14	32.68	559	39.97	31.54	5,576	46.02	34.52	2,571	41.82	32.22	1,249
Weaknesses	42.26	31.86	1,900	41.02	31.09	743	41.25	33.57	559	39.64	30.96	5,576	42.81	34.66	2,571	48.06	36.01	1,249
Grade 4																		
Grade	27.40	28.22	1,560	28.96	31.67	673	35.43	33.06	525	32.33	29.23	5,707	31.88	31.17	2,568	34.04	32.19	1,180
Strengths	36.02	30.09	1,560	35.14	33.17	673	36.80	32.64	525	33.71	29.59	5,707	34.19	30.49	2,568	33.36	29.58	1,180
Weaknesses	36.54	30.47	1,560	38.19	33.53	673	40.08	35.00	525	34.24	30.38	5,707	32.57	29.38	2,568	29.54	26.71	1,180
Grade 5																		
Grade	30.78	30.84	1,420	35.01	29.01	564	35.24	28.41	545	34.21	28.62	5,740	33.69	29.49	2,733	27.30	27.30	1,314
Strengths	33.02	30.19	1,420	34.86	27.77	564	28.45	26.89	545	29.86	28.67	5,740	27.55	25.80	2,733	28.45	27.53	1,314
Weaknesses	31.20	27.79	1,420	31.74	24.83	564	25.01	26.32	545	30.66	28.69	5,740	25.59	25.53	2,733	26.28	24.43	1,314
Grade 6																		
Grade	29.14	28.37	1,121	26.17	24.83	537	36.98	35.19	489	29.10	26.13	5,569	26.49	26.98	4,098	29.45	27.86	1,682
Strengths	29.46	25.64	1,121	32.12	31.76	537	31.82	30.89	489	29.03	27.47	5,569	25.79	26.52	4,098	21.58	24.99	1,682
Weaknesses	28.38	24.49	1,121	32.21	30.26	537	30.15	31.50	489	27.08	25.13	5,569	24.72	24.02	4,098	20.28	24.09	1,682

Table 4-35

Number of Times per Semester Math Students Receive Feedback, by Grade and Selection Category

Type of Feedback	Title I Students in Title I Schools			Other-CE Students in Title I Schools			Other-CE Students in Other-CE Schools			Non-CE Students in Title I Schools			Non-CE Students in Other-CE Schools			Non-CE Students in Non-CE Schools		
	Mean	S. D.	N	Mean	S. D.	N	Mean	S. D.	N	Mean	S. D.	N	Mean	S. D.	N	Mean	S. D.	N
Grade 1																		
Grade	36.12	40.15	910	29.28	38.14	774	37.29	39.49	364	40.84	40.02	7,807	40.33	41.90	2,970	47.42	42.42	1,338
Strengths	48.09	33.33	910	47.12	36.23	774	50.53	37.72	364	47.33	35.06	7,807	52.14	36.86	2,970	44.12	36.08	1,338
Weaknesses	47.79	32.71	910	43.32	34.86	774	49.21	37.51	364	46.49	35.06	7,807	52.55	36.14	2,970	39.37	35.03	1,338
Grade 2																		
Grade	48.31	38.19	901	28.73	35.45	625	41.46	33.25	283	46.24	37.71	6,903	52.31	38.71	2,679	36.91	35.79	1,154
Strengths	53.87	35.99	901	36.91	32.68	625	39.86	32.55	283	46.06	33.46	6,903	49.22	22.73	2,679	46.85	32.13	1,154
Weaknesses	53.55	35.22	901	34.23	31.77	625	41.69	31.09	283	46.74	33.92	6,903	46.58	31.98	2,679	41.56	32.03	1,154
Grade 3																		
Grade	48.73	34.40	983	37.96	35.98	551	50.29	36.62	367	43.32	35.58	6,616	48.78	36.49	2,693	44.12	37.46	1,228
Strengths	42.28	30.79	983	44.04	29.37	551	43.59	28.88	367	39.47	31.31	6,616	46.54	33.35	2,693	48.99	32.02	1,228
Weaknesses	43.96	30.30	983	40.50	31.04	551	43.86	29.70	367	40.80	31.47	6,616	46.73	33.23	2,693	56.27	34.29	1,228
Grade 4																		
Grade	31.85	33.18	847	36.59	33.86	616	44.74	34.31	333	43.41	34.88	6,144	39.36	30.01	2,560	38.08	30.05	1,194
Strengths	39.93	31.15	847	42.41	31.84	616	45.78	33.36	333	42.70	30.62	6,144	41.83	30.67	2,560	44.11	32.57	1,194
Weaknesses	44.04	31.24	847	44.54	34.61	616	50.77	35.86	333	45.15	31.04	6,144	41.14	31.30	2,560	41.33	32.40	1,194
Grade 5																		
Grade	37.58	34.36	828	32.87	29.45	480	40.67	33.66	396	46.13	32.14	6,103	43.93	31.45	2,865	35.89	29.22	1,273
Strengths	45.10	32.22	828	40.88	27.19	480	40.05	30.87	396	40.20	32.01	6,103	32.93	27.54	2,865	37.48	31.10	1,273
Weaknesses	46.09	31.65	828	48.14	32.40	480	36.01	32.27	396	42.56	31.12	6,103	32.18	28.06	2,865	36.02	30.76	1,273
Grade 6																		
Grade	40.76	33.48	620	40.77	35.98	656	36.95	35.06	374	39.47	30.31	6,085	36.57	31.60	4,200	43.86	30.72	1,639
Strengths	40.52	28.52	620	37.73	29.15	656	23.49	24.67	374	34.36	28.94	6,085	34.42	29.91	4,200	52.16	34.58	1,639
Weaknesses	35.23	26.20	620	43.32	34.31	656	29.53	26.56	374	34.00	27.88	6,085	36.88	30.75	4,200	55.16	33.85	1,639

Table 4-36

Hours of Reading and Math Homework per Week by Grade and Selection Category

Grade	Title I Students in Title I Schools			Other-CE Students in Title I Schools			Other-CE Students in Other-CE Schools			Non-CE Students in Title I Schools			Non-CE Students in Other-CE Schools			Non-CE Students in Non-CE Schools		
	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
									Reading									
1	0.51	0.65	1,534	0.53	0.71	782	0.53	0.59	494	0.60	0.82	6,382	0.41	0.62	2,687	0.47	0.82	1,215
2	0.63	0.86	1,685	0.58	0.71	785	0.65	0.62	545	0.61	0.86	5,264	0.51	0.67	2,375	0.51	0.65	1,108
3	0.63	0.84	1,827	0.47	0.60	692	0.73	0.71	497	0.57	0.84	5,057	0.42	0.62	2,329	0.69	0.82	1,160
4	0.77	1.01	1,474	0.36	0.55	619	0.81	0.92	516	0.70	0.91	5,173	0.62	0.76	2,346	0.89	0.89	1,124
5	0.81	0.99	1,308	0.66	0.80	530	1.21	1.22	533	0.76	0.87	5,328	0.79	0.99	2,560	1.13	1.13	1,250
6	0.79	0.93	1,065	0.68	0.75	495	1.06	1.08	471	0.76	0.86	5,147	0.71	0.85	3,923	0.97	0.91	1,592
									Math									
1	0.39	0.67	825	0.28	0.42	700	0.42	0.41	320	0.30	0.57	6,937	0.25	0.51	2,672	0.26	0.35	1,168
2	0.67	0.93	839	0.57	0.69	574	0.71	0.51	267	0.49	0.76	6,262	0.33	0.50	2,449	0.44	0.66	1,054
3	1.09	1.01	953	0.97	0.99	506	0.78	0.68	337	0.77	0.83	6.032	0.59	0.70	2,433	0.78	0.94	1,117
4	0.97	0.86	801	0.87	0.89	583	0.93	0.77	324	0.97	0.95	5,683	0.83	0.74	2,364	1.15	0.99	1,126
5	1.43	1.23	782	1.30	0.94	451	1.49	1.09	358	1.22	1.06	5,720	1.22	0.82	2,456	1.19	1.05	1,193
6	1.02	0.86	594	1.30	1.02	626	1.42	1.18	361	1.22	0.90	5,705	1.26	0.88	4,043	1.39	1.26	1,569

which students (regular achievers and low achievers, separately) use a variety of equipment (sound equipment, viewers, projectors, special reading/math machines, and television) in the course of their instruction. Values on this composite variable could range from 0 to 160. Table 4-37 presents the means for reading and math for each student selection category, by grade. For reading, there is a tendency toward decreased equipment usage in the upper grades, while for math there is a slight but inconsistent trend toward increased usage in the upper grades. There is little difference in usage of equipment for reading that can be attributed to student selection category; however, in math, Title I students and Other-CE students in Other-CE schools have the highest equipment usage.

Teaching Approaches in Reading. This analysis is based on student data generated from an item in the Teacher Questionnaire that asked teachers to what extent they use a variety of teaching approaches in their reading instruction for regular and for low-achieving students. Each approach listed was to be marked 'use as a major approach', 'use as a secondary approach', or 'not used'. No comparable item was given to math teachers. Tables 4-38 through 4-43 present the results for reading. For grades 1 and 2, the most common approach is the use of graded reading series containing frequently occurring words with new words being introduced by sight and by phonic analysis. At the upper grades, three approaches are used frequently: reading in the content fields, emphasis on literal comprehension and implied meanings, and emphasis on literary forms and literary appreciation. Among students of the six CE selection categories, there are some differences in instructional approaches used by their reading teachers. Four approaches are used more commonly for CE students than for non-CE students. These are: (1) a self-instructional approach that presents materials in frames with immediate feedback, (2) an approach in which children select their own reading materials and receive instruction primarily through teacher-child conferences, (3) an approach using a modified alphabet system which augments or marks the regular alphabet, and (4) an approach in which children read their own writings, on which instruction is then based.

Reading-Related Activities. Two items were examined here. The first concerns how many minutes per day students (data for regular and low achieving students were generated separately from teacher responses) spend in reading-related activities such as spelling, vocabulary study, grammar, and writing. Table 4-44 presents the means by grade and by student selection category. The time spent in reading-related activities tends to peak at grades 3 and 4, reaching an average of about 50 minutes per day. There are no differences in time spent attributable to student selection category.

The second item is concerned with the type of texts students use when reading in subject matter areas. Table 4-45 indicates that, from the second grade on, the texts used are most often at the student's grade level. However, there is a slight tendency for CE students to have more access to texts at their achievement level (or texts that vary in difficulty) than do non-CE students. For grades 4, 5, and 6, slightly more than half of the CE students use texts that are at their grade level when they read for subject-matter area. The grade-level texts are probably too difficult for them.

Table 4-37

Use of Reading and Math Equipment by Grade and Selection Category

	Title I Students in Title I Schools			Other-CE Students in Title I Schools			Other-CE Students in Other-CE Schools			Non-CE Students in Title I Schools			Non-CE Students in Other-CE Schools			Non-CE Students in Non-CE Schools		
Grade	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
									Reading									
1	23.53	26.47	1,518	20.99	20.63	803	27.59	31.71	512	23.28	24.50	6,342	23.19	23.03	2,699	23.77	23.64	1,249
2	23.05	27.65	1,738	20.09	23.12	792	27.53	29.35	584	21.18	24.37	5,285	21.51	21.03	2,381	19.28	17.56	1,108
3	24.02	27.57	1,828	20.82	23.89	692	25.19	33.51	531	18.02	23.49	5,100	16.28	19.98	2,379	16.80	22.05	1,124
4	21.83	29.41	1,486	14.79	17.54	633	23.31	23.76	508	18.84	24.05	5,248	14.16	17.97	2,391	9.17	12.96	1,124
5	20.43	26.80	1,331	16.63	18.75	531	20.81	22.54	532	15.69	23.14	5,320	13.84	17.88	2,607	18.24	29.43	1,250
6	19.69	20.84	1,080	15.01	18.42	502	20.92	26.23	470	14.89	19.80	5,201	12.26	16.50	3,912	11.77	19.96	1,598
									Math									
1	11.28	20.09	819	4.23	6.84	719	6.90	12.24	349	6.57	14.77	7,053	3.66	6.55	2,720	3.29	6.04	1,237
2	12.77	20.77	846	4.80	7.66	575	11.16	16.81	269	6.56	13.71	6,324	5.92	10.75	2,498	6.96	12.21	1,049
3	15.71	23.69	953	6.93	12.59	507	5.00	7.73	349	8.85	15.12	6,125	5.79	11.12	2,519	10.19	15.80	1,110
4	16.12	29.55	790	7.41	12.70	582	14.20	15.83	326	10.26	17.18	5,617	5.88	12.80	2,412	4.61	6.80	1,134
5	11.64	21.27	768	5.81	8.04	451	19.65	28.69	374	8.55	16.13	5,656	7.61	17.20	2,631	11.29	19.41	1,208
6	11.25	13.26	589	10.10	13.08	623	21.52	34.54	363	9.67	16.03	5,652	5.89	10.02	4,046	5.37	8.64	1,578

*Scores on this composite variable were created by summing the frequency per month of use of various pieces of equipment. Eleven items were summed, and the total score could range between 0 and 160.

Table 4-38

Extent of Use (1 = Not Used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 1

	Title I Students in Title I Schools (N=1,578)		Other-CE Students in Title I Schools (N=808)		Other-CE Students in Other-CE Schools (N=517)		Non-CE Students in Title I Schools (N=6,473)		Non-CE Students in Other-CE Schools (N=2,692)		Non-CE Students in Non-CE Schools (N=1,223)	
Reading Approaches	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Graded sight phonic analysis	2.39	0.83	2.35	0.85	2.35	0.87	2.57	0.75	2.55	0.76	2.54	0.79
Graded spelling, sounding/ blending	1.86	0.85	1.84	0.82	1.74	0.76	1.69	0.79	1.80	0.79	1.56	0.70
Graded letter-sound relationships	1.96	0.88	2.03	0.91	1.84	0.88	1.82	0.84	1.74	0.83	1.83	0.83
Self-instructional with reinforcement	1.51	0.81	1.53	0.82	1.60	0.82	1.36	0.70	1.33	0.68	1.31	0.65
Students select own materials	1.60	0.82	1.65	0.83	1.65	0.72	1.44	0.70	1.38	0.65	1.51	0.69
Modified alphabet	1.60	0.87	1.44	0.80	1.59	0.86	1.34	0.70	1.28	0.67	1.38	0.71
Student read own writing	1.64	0.72	1.67	0.77	1.79	0.78	1.53	0.67	1.49	0.64	1.55	0.67
Reading in content fields	1.56	0.82	1.62	0.83	1.65	0.84	1.35	0.68	1.31	0.63	1.49	0.74
Literal and implied comprehension	1.86	0.85	1.85	0.80	1.82	0.89	1.83	0.81	1.74	0.87	1.77	0.85
Literary forms and appreciation	1.68	0.84	1.65	0.80	1.75	0.84	1.55	0.71	1.51	0.70	1.74	0.70

Table 4-39

Extent of Use (1 = Not Used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 2

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	(N=1,746)		(N=780)		(N=584)		(N=5,324)		(N=2,403)		(N=1,108)	
Reading Approaches	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Graded sight phonic analysis	2.13	0.91	2.29	0.81	2.13	0.89	2.35	0.85	2.44	0.83	2.45	0.80
Graded spelling, sounding/blending	1.90	0.85	1.76	0.78	1.82	0.82	1.81	0.82	1.82	0.84	1.57	0.78
Graded letter-sound relationships	2.11	0.87	1.97	0.87	2.08	0.87	2.01	0.86	1.96	0.86	1.90	0.84
Self-instructional with reinforcement	1.65	0.87	1.55	0.87	1.63	0.82	1.43	0.74	1.43	0.64	1.32	0.72
Students select own materials	1.79	0.83	1.61	0.80	1.65	0.81	1.53	0.73	1.44	0.68	1.41	0.68
Modified alphabet	1.67	0.90	1.58	0.89	1.70	0.86	1.40	0.73	1.21	0.53	1.33	0.72
Student read own writing	1.77	0.76	1.59	0.78	1.78	0.84	1.56	0.71	1.25	0.50	1.51	0.70
Reading in content fields	1.87	0.80	1.70	0.78	1.97	0.81	1.69	0.72	1.67	0.64	1.63	0.74
Literal and implied comprehension	2.06	0.82	1.88	0.81	2.11	0.83	2.07	0.81	2.07	0.75	2.03	0.82
Literary forms and appreciation	1.88	0.82	1.74	0.77	2.04	0.76	1.75	0.76	1.74	0.63	1.62	0.70

Table 4-40

Extent of Use (1 = Not Used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 3

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	(N=1,819)		(N=682)		(N=533)		(N=5,049)		(N=2,373)		(N=1,150)	
Reading Approaches	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Graded sight phonic analysis	1.87	0.91	2.01	0.86	1.96	0.92	2.25	0.86	2.29	0.86	2.33	0.84
Graded spelling, sounding/blending	1.85	0.80	1.91	0.79	1.90	0.87	1.68	0.78	1.68	0.81	1.69	0.83
Graded letter-sound relationships	2.01	0.86	2.16	0.84	2.09	0.88	2.03	0.86	2.08	0.85	2.10	0.79
Self-instructional with reinforcement	2.15	0.90	1.98	0.89	1.88	0.90	1.53	0.80	1.44	0.77	1.60	0.85
Students select own materials	2.20	0.82	2.10	0.80	1.99	0.81	1.66	0.74	1.51	0.73	1.77	0.79
Modified alphabet	2.19	0.94	1.91	0.94	2.07	0.96	1.51	0.82	1.33	0.72	1.52	0.81
Student read own writing	2.18	0.82	2.04	0.85	2.07	0.83	1.63	0.75	1.50	0.71	1.78	0.78
Reading in content fields	2.29	0.72	2.18	0.70	2.31	0.71	2.00	0.70	1.88	0.65	2.03	0.67
Literal and implied comprehension	2.05	0.86	2.17	0.76	2.32	0.83	2.09	0.83	2.15	0.82	2.14	0.79
Literary forms and appreciation	2.21	0.81	2.08	0.73	2.26	0.73	1.81	0.77	1.84	0.67	1.97	0.69

Table 4-41

Extent of Use (1 = Not Used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 4

	Title I Students in Title I Schools (N=1,469)		Other-CE Students in Title I Schools (N=632)		Other-CE Students in Other-CE Schools (N=509)		Non-CE Students in Title I Schools (N=5,212)		Non-CE Students in Other-CE Schools (N=2,361)		Non-CE Students in Non-CE Schools (N=1,124)	
Reading Approaches	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Graded sight phonic analysis	1.77	0.88	1.98	0.89	1.88	0.92	2.17	0.85	2.14	0.90	2.18	0.82
Graded spelling, sounding/ blending	1.94	0.84	1.93	0.83	1.66	0.78	1.72	0.76	1.69	0.78	1.66	0.78
Graded letter-sound relationships	2.04	0.84	2.17	0.82	1.88	0.79	2.02	0.81	1.95	0.88	1.86	0.82
Self-instructional with reinforcement	2.25	0.87	2.02	0.95	1.98	0.88	1.65	0.84	1.49	0.77	1.73	0.88
Students select own materials	2.25	0.78	2.07	0.83	2.03	0.79	1.72	0.78	1.68	0.73	1.92	0.85
Modified alphabet	2.28	0.88	2.09	0.92	2.11	0.92	1.62	0.86	1.49	0.85	1.63	0.88
Student read own writing	2.20	0.77	1.95	0.82	2.07	0.87	1.70	0.79	1.48	0.75	1.72	0.83
Reading in content fields	2.18	0.67	2.35	0.70	2.19	0.72	2.12	0.68	2.08	0.67	2.09	0.65
Literal and implied comprehension	1.95	0.85	2.04	0.78	2.14	0.83	2.16	0.82	2.23	0.80	2.17	0.81
Literary forms and appreciation	2.15	0.77	2.15	0.82	2.11	0.69	1.88	0.74	1.95	0.66	2.06	0.67

Table 4-42

Extent of Use (1 = Not Used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 5

	Title I Students in Title I Schools		Other-CE Students in Title I Schools		Other-CE Students in Other-CE Schools		Non-CE Students in Title I Schools		Non-CE Students in Other-CE Schools		Non-CE Students in Non-CE Schools	
	(N=1,317)		(N=519)		(N=530)		(N=5,336)		(N=2,606)		(N=1,199)	
Reading Approaches	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Graded sight phonic analysis	1.79	0.84	1.95	0.86	1.85	0.85	2.07	0.87	2.07	0.87	1.94	0.85
Graded spelling, sounding/blending	2.00	0.85	1.95	0.87	1.90	0.82	1.75	0.79	1.73	0.81	1.78	0.86
Graded letter-sound relationships	2.10	0.78	2.13	0.71	1.93	0.76	1.97	0.83	1.87	0.76	1.97	0.86
Self-instructional with reinforcement	2.27	0.87	2.11	0.92	2.08	0.87	1.61	0.83	1.60	0.78	1.72	0.91
Students select own materials	2.23	0.77	2.18	0.82	2.21	0.80	1.82	0.79	1.75	0.77	1.93	0.85
Modified alphabet	2.38	0.87	2.13	0.96	2.26	0.90	1.58	0.85	1.57	0.84	1.63	0.86
Student read own writing	2.28	0.76	2.09	0.85	2.12	0.76	1.69	0.76	1.64	0.77	1.78	0.78
Reading in content fields	2.12	0.70	2.24	0.74	2.26	0.62	2.06	0.70	2.19	0.62	2.18	0.72
Literal and implied comprehension	1.92	0.78	2.22	0.73	2.09	0.80	2.19	0.78	2.35	0.75	2.23	0.82
Literary forms and appreciation	2.20	0.68	2.22	0.82	2.17	0.71	1.99	0.72	2.07	0.69	2.06	0.72

Table 4-43

Extent of Use (1 = Not Used; 2 = Secondary Approach; 3 = Major Approach) for Ten Reading Approaches by Selection Category, for Grade 6

	Title I Students in Title I Schools (N=1,072)		Other-CE Students in Title I Schools (N=472)		Other-CE Students in Other-CE Schools (N=468)		Non-CE Students in Title I Schools (N=5,184)		Non-CE Students in Other-CE Schools (N=3,879)		Non-CE Students in Non-CE Schools (N=1,598)	
Reading Approaches	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Graded sight phonic analysis	1.86	0.87	2.02	0.85	1.65	0.83	1.98	0.88	1.90	0.87	2.07	0.85
Graded spelling, sounding/blending	2.05	0.82	2.21	0.86	2.12	0.91	1.75	0.83	1.68	0.83	1.72	0.88
Graded letter-sound relationships	1.99	0.77	1.97	0.80	2.14	0.86	1.87	0.84	1.82	0.84	1.80	0.92
Self-instructional with reinforcement	2.38	0.79	2.26	0.83	2.13	0.85	1.75	0.85	1.56	0.81	1.80	0.76
Students select own materials	2.27	0.70	2.29	0.77	2.26	0.74	1.92	0.75	1.84	0.84	1.99	0.87
Modified alphabet	2.41	0.86	2.42	0.88	2.25	0.87	1.64	0.89	1.52	0.81	1.75	0.92
Student read own writing	2.31	0.75	2.27	0.78	2.21	0.76	1.73	0.82	1.63	0.79	1.72	0.88
Reading in content fields	2.13	0.74	2.06	0.72	2.11	0.68	2.13	0.70	2.03	0.72	2.10	0.81
Literal and implied comprehension	1.83	0.82	1.74	0.77	2.08	0.75	2.25	0.81	2.17	0.85	2.24	0.91
Literary forms and appreciation	2.23	0.69	2.27	0.75	2.36	0.59	2.05	0.72	2.01	0.73	2.05	0.75

Table 4-44

Minutes per Day Spent in Reading-Related Activities, by Grade and Selection Category

	Title I Students in Title I Schools			Other-CE Students in Title I Schools			Other-CE Students in Other-CE Schools			Non-CE Students in Title I Schools			Non-CE Students in Other-CE Schools			Non-CE Students in Non-CE Schools		
Grade	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
1	38.08	17.46	1,575	36.01	17.10	804	41.30	17.95	517	39.32	17.59	6,445	39.03	16.85	2,692	40.57	18.66	1,223
2	47.23	18.34	1,739	42.93	17.72	796	46.09	17.13	578	48.20	17.31	5,307	46.36	17.27	2,402	45.78	17.18	1,107
3	51.29	16.99	1,824	48.89	18.06	692	51.98	18.94	525	53.54	16.74	5,077	50.38	17.71	2,380	52.53	15.64	1,150
4	51.20	16.22	1,452	48.18	17.25	632	53.32	16.44	482	52.48	15.73	5,182	52.63	15.02	2,366	51.93	15.91	1,124
5	49.73	17.13	1,329	49.25	18.48	531	48.02	16.42	525	51.56	16.94	5,355	52.42	16.52	2,603	52.29	16.05	1,250
6	50.85	18.76	1,086	51.71	16.01	498	47.79	18.03	466	49.62	17.83	5,182	48.29	16.44	3,880	48.50	16.70	1,619

Table 4-45

Percentages of Students Using Different Kinds of Texts in Subject-Matter Areas by Grade and Selection Category

Level of Texts	Title I Students in Title I Schools (N=9,566)*	Other-CE Students in Title I Schools (N=4,235)	Other-CE Students in Other-CE Schools (N=3,300)	Non-CE Students in Title I Schools (N=35,465)	Non-CE Students in Other-CE Schools (N=17,483)	Non-CE Students in Non-CE Schools (N=7,959)
Grade 1; N=14,495**						
Texts at grade level	35.9	29.4	42.7	42.8	51.7	50.3
Texts vary	9.6	12.0	15.7	7.5	12.1	13.4
Texts at achievement level	3.1	4.1	6.2	4.8	2.6	3.0
No texts	51.5	54.6	35.4	44.9	33.6	33.4
Grade 2; N=12,890						
Texts at grade level	53.0	33.3	53.1	58.2	57.8	48.7
Texts vary	17.9	20.8	30.5	18.0	24.2	23.5
Texts at achievement level	7.6	13.1	0.2	7.5	0.9	0.0
No texts	21.5	32.9	16.3	16.3	17.1	27.8
Grade 3; N=12,598						
Texts at grade level	56.1	38.5	64.0	66.2	77.9	73.2
Texts vary	25.1	31.8	28.4	21.6	13.6	20.2
Texts at achievement level	8.8	12.7	3.0	6.3	2.9	0.0
No texts	10.1	17.1	4.5	5.9	5.6	6.6
Grade 4; N=12,213						
Texts at grade level	57.8	53.0	48.4	71.3	70.7	67.5
Texts vary	35.7	39.2	30.1	21.7	22.9	25.9
Texts at achievement level	3.3	1.3	14.3	3.6	3.9	5.0
No texts	3.2	6.4	7.2	3.4	2.5	1.6
Grade 5; N=12,316						
Texts at grade level	53.7	54.4	57.2	68.3	74.3	70.9
Texts vary	38.9	37.6	33.8	28.1	21.1	22.8
Texts at achievement level	4.9	6.6	7.0	2.7	1.8	4.7
No texts	2.5	1.4	2.0	0.8	2.9	1.6
Grade 6; N=13,496						
Texts at grade level	56.8	55.3	54.8	67.2	51.0	47.7
Texts vary	32.2	42.6	32.7	30.1	45.9	38.4
Texts at achievement level	10.0	0.7	11.0	2.2	1.9	7.5
No texts	1.0	1.3	1.4	0.5	1.2	6.4

*N indicates the total number of students in the selection category for all six grades.

**N indicates total number of students in the grade.

Variations of Instructional Services Among Grade Levels

The previous section has already pointed out a number of variations in services and activities across grade levels. Thus, the major purpose here is to reiterate and summarize some of these variations.

Grade Changes in Reading Approaches. Table 4-46 summarizes the information presented in the previous section relating to the teaching approaches used in reading instruction. This table accentuates the trend from a basic word frequency/phonic analysis approach in the lower grades to an approach emphasizing literal and implicational comprehension in the upper grades. The cross-over in emphasis occurs between grades 4 and 5.

Grade Changes in Instructional Activities. Tables 4-47 and 4-48 summarize the relative frequencies of activities for reading and math that were discussed in the previous section. Here again we can see the decrease in emphasis on basic reading skills (the first four activities in Table 4-47) with grades while the activities focusing on syllabification, use of context clues, and use of references increase. In math, the emphases on computational skills and structure of number systems remain constant across grades while word problems and number theory increase in emphasis, while learning about number sentences and sets decrease in emphasis.

Grade Changes in Service Profiles. Tables 4-49 and 4-50 summarize the mean scores on the service profile items first presented in Tables 4-3 to 4-14. In Table 4-49, six of the profile items for reading show a decrease across grades: instruction by the classroom teacher in a group of 7 to 13 students; instruction by the classroom teacher individually or in a group of 2-6 students; instruction by a special reading teacher individually, or in a group of 2-6 students; assistance by a paid aide or paid teaching assistant, individually or in groups of 2-10 students; tutoring by another student or adult volunteer; and working independently using non-programmed materials. However, the service profiles described by the absolute hours do not give a clear picture of the differences in relative emphases on the ten specific services among the six grades. As the total hours of reading services decrease steadily with grades, the proportional distributions of the total hours to the ten profile items provide better bases for such comparisons.

Compared with the lower three grades, there is a tendency for students in the upper three grades to receive proportionately more instruction from classroom teachers in groups of 14 or more students, and less from classroom teachers in groups of 13 or fewer students. The proportions of reading time allocated to instruction by special teachers, aides or assistants, tutors, or volunteers, are small, with a combined total of less than 10 percent for each grade. The percentages of time spent in these types of reading services do not vary appreciably with grades, though students at higher grades tend to receive slightly less instruction by paid aides or assistants. The hours spent in working independently using non-programmed materials are reduced substantially as grade level increases, but the variation among grades in terms of proportions of time allocated to this item is not large, ranging from 28 percent at the 6th-grade to 33 percent at the 3rd-grade.

Table 4-46

Percentages of Students Whose Teachers Use Each Teaching Approach as a Major Approach in Reading, for Each Grade

Teaching Approach	Grade 1 (N=13,291)	Grade 2 (N=11,945)	Grade 3 (N=11,606)	Grade 4 (N=11,307)	Grade 5 (N=11,507)	Grade 6 (N=12,673)
Graded reading series based on word frequency. New words introduced by sight and phonetic analysis.	69.6%	58.2%	49.8%	43.4%	38.4%	35.5%
Graded reading series based on regularly spelled words. Short vowels first. New words by analysis of spelling and sounding and blending.	21.9%	26.2%	22.4%	21.7%	25.1%	27.4%
Graded reading series that rapidly introduces all letter sound relationships. New words learned by sounding and blending.	29.5%	37.7%	39.0%	34.7%	31.0%	28.7%
Self-instructional approach that presents small bits of information in frames, with immediate feedback.	14.3%	16.2%	26.0%	28.7%	28.4%	30.0%
Children select reading materials. Instruction through teacher-child conferences.	13.3%	15.7%	22.9%	25.6%	28.1%	30.4%
Modified alphabet system to augment or mark the regular alphabet.	15.4%	16.6%	27.4%	31.2%	31.3%	32.0%
Children read their own writing on which instruction is then based.	11.2%	12.9%	22.9%	24.0%	23.8%	26.6%
Reading in the content fields, with teaching of study skills and organization skills.	13.7%	16.8%	27.6%	30.5%	30.9%	31.3%
Use reading series and/or other books to teach literal comprehension and implications.	27.1%	35.0%	40.8%	41.9%	42.7%	45.3%
Use reading series and/or other books to teach literature and literary appreciation.	15.2%	19.0%	25.8%	25.4%	28.7%	30.4%

Table 4-47

Frequency of Reading Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) by Grade Level

		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Reading Activities		(N=13,368)	(N=11,986)	(N=11,660)	(N=11,497)	(N=11,642)	(N=12,875)
Identifying and practicing letter-sound correspondence	Mean	4.81	4.40	3.91	3.57	3.21	2.88
	S.D.	0.61	1.04	1.33	1.42	1.44	1.40
Identifying and writing letters or groups of letters	Mean	4.60	4.02	3.63	3.16	2.76	2.62
	S.D.	0.87	1.27	1.46	1.46	1.45	1.40
Blending the sounds letters stand for to form words	Mean	4.59	4.46	4.10	3.65	3.32	3.00
	S.D.	0.92	0.98	1.19	1.32	1.36	1.32
Learning and practicing sight words	Mean	4.44	4.27	4.00	3.56	3.34	3.15
	S.D.	0.98	1.14	1.18	1.39	1.45	1.40
Dividing words into syllables	Mean	2.23	3.49	3.82	3.83	3.79	3.64
	S.D.	1.36	1.34	1.24	1.16	1.10	1.10
Using context clues to gain understanding	Mean	3.98	4.17	4.20	4.21	4.24	4.26
	S.D.	1.17	1.10	1.04	1.00	0.97	0.94
Answering questions on comprehension	Mean	4.45	4.54	4.50	4.47	4.53	4.51
	S.D.	0.88	0.90	0.93	0.93	0.86	0.88
Reading and writing stories created by self or other students	Mean	2.61	3.18	3.11	2.96	3.22	3.01
	S.D.	1.31	1.24	1.23	1.21	1.28	1.32
Reading texts orally	Mean	4.56	4.44	4.17	3.82	3.72	3.49
	S.D.	0.91	0.97	1.07	1.23	1.16	1.22
Answering comprehension questions on timed readings	Mean	1.86	2.34	2.43	2.53	2.63	2.55
	S.D.	1.28	1.44	1.39	1.40	1.43	1.34
Alphabetizing	Mean	2.23	3.59	3.74	3.51	3.28	2.99
	S.D.	1.29	1.17	1.16	1.14	1.18	1.19
Using reference materials	Mean	1.76	2.69	3.27	3.67	3.92	3.92
	S.D.	1.08	1.27	1.33	1.20	1.07	1.12

Table 4-48

Frequency of Various Math Activities (1 = Never or Almost Never; 3 = Sometimes; 5 = Very Frequently) by Grade Level

Math Activities		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
		(N=12,994)	(N=11,634)	(N=11,582)	(N=10,983)	(N=11,281)	(N=12,940)
Learning Math vocabulary	Mean	3.78	3.70	3.66	3.53	3.55	3.50
	S.D.	1.14	1.10	1.06	1.10	1.12	1.11
Solving word problems	Mean	2.33	3.34	3.42	3.46	3.29	3.25
	S.D.	1.31	1.11	1.07	1.08	1.10	1.01
Learning symbols	Mean	4.15	3.74	3.55	3.41	3.37	3.35
	S.D.	1.07	1.11	1.12	1.10	1.11	1.02
Learning properties and axioms	Mean	2.19	2.38	2.43	2.56	2.56	2.62
	S.D.	1.38	1.33	1.23	1.27	1.19	1.16
Learning about number sentences	Mean	4.24	4.16	3.77	3.51	3.13	3.05
	S.D.	1.14	1.01	1.09	1.15	1.17	1.11
Learning about sets	Mean	4.20	3.68	3.41	2.84	2.64	2.44
	S.D.	1.13	1.29	1.27	1.26	1.24	1.20
Learning geometric concepts	Mean	2.76	2.71	2.54	2.42	2.55	2.47
	S.D.	1.26	1.12	1.17	1.21	1.22	1.30
Learning about measurement	Mean	2.58	2.81	2.84	2.75	2.81	2.90
	S.D.	1.18	1.09	1.14	1.15	1.19	1.26
Learning about number theory	Mean	1.55	1.84	2.37	2.59	2.88	3.22
	S.D.	1.07	1.25	1.41	1.34	1.36	1.37
Learning about fundamental operations	Mean	3.97	4.22	4.22	4.35	4.39	4.42
	S.D.	1.48	1.19	1.15	1.06	1.02	0.96
Learning about structure of number systems	Mean	2.87	2.92	3.03	3.12	3.03	3.04
	S.D.	1.56	1.40	1.37	1.34	1.28	1.27
Reviewing computational skills	Mean	4.03	4.34	4.45	4.46	4.39	4.37
	S.D.	1.40	1.11	0.93	0.94	1.01	0.92
Working with math games	Mean	3.64	3.53	3.40	3.24	2.97	2.85
	S.D.	1.17	1.11	1.11	1.14	1.11	1.12
Working with physical models	Mean	2.87	2.67	2.48	2.31	2.24	2.26
	S.D.	1.49	1.27	1.21	1.14	1.19	1.20

Table 4-49

Hours of Reading Instructional Services Received per Year, by Grade for All Students

Reading Services		Grade 1 (N=14,054)		Grade 2 (N=12,550)		Grade 3 (N=12,461)		Grade 4 (N=12,137)		Grade 5 (N=12,327)		Grade 6 (N=14,649)	
Classroom teacher, 21+ students	Mean	45.87	(15.4%)*	36.72	(13.1%)	36.38	(15.1%)	39.35	(19.2%)	44.75	(23.2%)	45.94	(26.4%)
	S.D.	67.60		62.40		58.25		57.65		58.57		53.51	
Classroom teacher, 14-20 students	Mean	15.50	(5.2%)	16.70	(5.9%)	18.62	(7.7%)	19.10	(9.3%)	16.06	(8.3%)	15.80	(9.1%)
	S.D.	44.59		45.58		52.64		39.99		34.44		34.80	
Classroom teacher, 7-13 students	Mean	72.69	(24.4%)	68.90	(24.5%)	51.04	(21.1%)	39.80	(19.4%)	34.70	(18.0%)	25.03	(14.4%)
	S.D.	69.28		70.80		59.08		50.52		46.85		42.99	
Classroom teacher, 1-6 students	Mean	37.22	(12.5%)	34.21	(12.2%)	27.19	(11.3%)	18.97	(9.2%)	16.69	(8.7%)	14.82	(8.5%)
	S.D.	51.73		53.40		41.07		34.76		31.36		31.46	
Special teacher, 7 or more students	Mean	3.06	(1.0%)	4.42	(1.6%)	4.44	(1.8%)	3.63	(1.8%)	3.34	(1.7%)	5.80	(3.3%)
	S.D.	15.54		17.60		17.54		16.25		16.60		21.87	
Special teacher, 1-6 students	Mean	5.78	(1.9%)	8.21	(2.9%)	7.55	(3.1%)	6.97	(3.4%)	5.66	(2.9%)	4.95	(2.8%)
	S.D.	21.07		25.25		23.38		21.26		20.49		17.69	
Aide or assistant, 1-10 students	Mean	12.45	(4.2%)	9.55	(3.4%)	8.51	(3.5%)	5.24	(2.6%)	4.86	(2.5%)	2.68	(1.5%)
	S.D.	28.02		24.13		21.14		16.11		16.89		12.45	
Tutor or volunteer, individual	Mean	3.20	(1.1%)	2.19	(0.8%)	1.48	(0.6%)	1.20	(0.6%)	1.08	(0.6%)	0.90	(0.5%)
	S.D.	11.28		8.59		7.18		5.62		5.54		4.38	
Ind. work, programmed material	Mean	8.88	(3.0%)	10.53	(3.7%)	7.94	(3.3%)	8.54	(4.2%)	9.17	(4.8%)	9.78	(5.6%)
	S.D.	27.37		29.79		23.81		22.42		24.06		23.98	
Ind. work nonprogrammed material	Mean	92.96	(31.2%)	89.55	(31.9%)	78.45	(32.5%)	62.57	(30.5%)	56.50	(29.3%)	48.56	(27.9%)
	S.D.	63.00		62.58		55.14		44.26		42.75		39.86	
Mean Total Hours of Reading Services		297.61		280.98		241.60		205.37		192.81		174.26	

*Entries in parentheses are percentages of time allocated to the specific instructional settings.

Table 4-50

Hours of Math Instructional Services Received per Year, by Grade for All Students

Math Services		Grade 1 (N=14,057)		Grade 2 (N=12,547)		Grade 3 (N=12,461)		Grade 4 (N=12,133)		Grade 5 (N=12,324)		Grade 6 (N=14,645)	
Classroom teacher, 21+ students	Mean	60.16	(37.4%)*	61.63	(37.4%)	65.81	(38.4%)	65.45	(38.3%)	67.70	(39.8%)	70.22	(43.4%)
	S.D.	56.02		52.88		53.36		53.55		60.77		59.78	
Classroom teacher, 14-20 students	Mean	13.93	(8.7%)	11.97	(7.3%)	12.03	(7.0%)	13.97	(8.2%)	11.95	(7.0%)	11.79	(7.3%)
	S.D.	31.39		27.47		27.89		30.19		27.98		29.56	
Classroom teacher, 7-13 students	Mean	12.18	(7.6%)	11.98	(7.3%)	12.97	(7.6%)	12.96	(7.6%)	16.40	(9.7%)	13.69	(8.5%)
	S.D.	26.17		28.55		28.36		28.92		32.70		32.93	
Classroom teacher, 1-6 students	Mean	10.10	(6.3%)	10.92	(6.6%)	10.14	(5.9%)	10.97	(6.4%)	12.70	(7.5%)	11.21	(6.9%)
	S.D.	19.98		21.42		21.13		23.45		26.96		25.03	
Special teacher, 7 or more students	Mean	1.36	(0.8%)	1.44	(0.9%)	1.82	(1.1%)	2.28	(1.3%)	2.98	(1.8%)	2.80	(1.7%)
	S.D.	8.51		8.20		9.55		13.04		16.82		14.26	
Special teacher, 1-6 students	Mean	0.87	(0.5%)	1.41	(0.9%)	2.22	(1.3%)	3.30	(1.9%)	2.97	(1.7%)	1.93	(1.2%)
	S.D.	5.74		10.16		10.58		13.88		14.17		10.02	
Aide or Assistant, 1-10 students	Mean	4.50	(2.8%)	4.47	(2.7%)	4.35	(2.5%)	3.02	(1.8%)	3.15	(1.9%)	1.75	(1.1%)
	S.D.	13.28		13.20		13.19		10.48		12.34		7.93	
Tutor or volunteer, individual	Mean	1.06	(0.7%)	0.84	(0.5%)	0.91	(0.5%)	1.03	(0.6%)	0.88	(0.5%)	0.93	(0.6%)
	S.D.	4.16		3.70		3.63		4.82		3.76		4.15	
Ind. work, programmed material	Mean	1.40	(0.9%)	2.96	(1.8%)	2.94	(1.7%)	4.69	(3.7%)	5.06	(3.0%)	6.53	(4.0%)
	S.D.	6.88		11.79		11.54		15.40		15.80		21.75	
Ind. work, nonprogrammed material	Mean	55.40	(34.4%)	56.98	(34.6%)	58.16	(33.9%)	53.09	(31.1%)	46.15	(27.2%)	40.85	(25.3%)
	S.D.	36.02		32.32		35.89		36.92		36.04		37.46	
Mean Total Hours of Math Services		160.96		164.60		171.35		170.76		169.94		161.70	

*Entries in parentheses are percentages of time allocated to the specific instructional settings.

In Table 4-50, three of the math items show an increase across grades, while one item shows a decrease. The three increasing items are: instruction by the classroom teacher as part of the whole class or a large group, instruction by a special math teacher in a group of 7 or more students, and working independently using programmed materials. The item that decreases is assistance by a paid aide or paid teaching assistant individually or in a group of 2-10 students. In contrast with reading, the variation in total hours of math services across grades is small.

Looking at the proportional distributions of time allocated to the ten profile items, they show little differences in most cases. There is a slight trend indicating more emphases on instruction by special teachers, and less on assistance by paid aides in the upper grades. But, the percentages of time spent in these items are small for all grades. The math services received in the form of independent work using non-programmed materials are proportionately less in grades 5 and 6 than in the earlier grades, decreasing from 35 percent at grade 2 to 25 percent at grade 6. There is no striking evidence for differences among grades in emphases on instruction by classroom teachers, despite a somewhat larger percentage of time spent by 6th graders in whole-class (with 21 students or more) instruction.

CHAPTER 5. COMPARISONS OF SERVICES RECEIVED BY CE SELECTEES AND NON-SELECTEES

In Chapters 3 and 4, the selection of students for receipt of CE services, and the instructional services received by students of different selection statuses have been described. We now turn to the question of how the services received by CE selectees differ from those they would receive if there were no CE programs. As often warned by many researchers, such comparisons are difficult to make in the realm of education, and their validity cannot be easily ascertained. Services received by students selected for CE and those not so selected may well be different for reasons quite independent of their selection status. If this is the case, observed differences may not be entirely explained by the presence or absence of CE services, but may also arise because of tracking practices within schools as well as variations among schools. Since these contaminating differences cannot be ignored and can only be statistically adjusted in unsatisfactory ways, we address the question in several ways in the hope that consistent findings will compel reasonable conclusions.

To provide answers to the above question, we have considered two 'comparison' groups of students: non-selectees attending CE schools, and students in non-CE schools. These groups of students may differ in many ways, including economic and achievement levels. Our intent is to compare services received by CE selectees with those received by these two 'comparison' groups, and then attempt to draw some conclusions regarding the observed differences.

In addition, we have investigated the types of activities the non-selectees are involved in while the CE selectees are participating in compensatory activities. This information will aid us in understanding the nature of CE services. Compensatory services may be delivered to the recipients during regular instructional hours so that the difference from the regular services lies primarily in the kinds of activities involved. On the other hand, CE services may also be provided outside the regular instructional hours when the non-participants are engaged in activities not related to basic skill instruction.

Comparisons with Non-Selectees in CE Schools

The comparisons between services received by CE selectees and non-selectees are made separately for reading and math, and for each grade. Only students attending CE schools were included in the analyses. To control for the possible effects of a school's tracking practice, students' achievement levels are employed jointly with CE selection status to form comparison groups. In the analyses for reading, students are classified as selected for reading CE services or not, and as regular- or low-achieving – depending on whether their CTBS non-debiased reading score is above the 33rd percentile rank or not. Likewise, math CE selection status and math achievement level were used jointly to divide students into subgroups for math analyses. Thus four analysis groups were created separately for reading, and for math:

- Low-achieving CE selectees
- Low-achieving CE non-selectees
- Regular-achieving CE selectees
- Regular-achieving CE non-selectees

The services received by the four groups of students during the school year were compared in terms of total hours of instruction attended as well as hours spent in each of the ten instructional settings listed in Figure 5-1. The complete results of the analyses are presented in Table C-1 for reading, and Table C-2 for math in Appendix C.

Careful study of the data in these tables reveals that the differences in services received among the four analysis groups occur primarily in two ways: types of instructors involved, and size of instructional groups. We therefore focus our later discussions on the differences in hours received under each category of the two newly constructed summary variables. Figure 5-1 illustrates how the original ten instructional settings were grouped into three categories for each of the two summary variables.

Further examinations of the profiles of services received by the four analysis groups show a similar pattern of differences between the CE selectees and non-selectees for the low- and regular-achieving groups. Figure 5-2 exhibits the total yearly hours of reading instructional services received by the four reading analysis groups. Similar data for math are displayed in Figure 5-3.

As may be seen from these figures, the major differences lie between the two classes of selection status rather than the two achievement levels. This phenomenon holds true for the service profiles of the ten specific instructional activities. On the basis of these findings, we have decided to include only the results combining the low- and regular-achieving students in the current text. For more detailed information, the readers are referred to Appendix C.

To summarize, the presentations in the rest of this section will focus on the differences between CE selectees and non-selectees by grade. Mean total hours of instructional services received per year are given in Table 5-1 for each grade by CE selection, and by subject area. Means for each category of the two service descriptive variables are presented with the aid of bar graphs in Figures 5-4 to 5-7.

Comparisons of Reading Instructional Services Received by Reading CE Selectees and Non-Selectees. Table 5-1 shows that, on the average, the reading CE selectees receive more hours per year of reading instruction than non-selectees, with the exceptions of grades 1 and 2. The differences between the two groups at these earlier grades are very small, though in an opposite direction. For grades 3 to 6, the yearly differences favoring the CE selectees range from 21 hours at the 3rd-grade to 37 hours at the 4th-grade. Using the average hours received by the non-selectees as the base line, the percentages of increased hours fall between 8.8 percent for the 3rd graders and 21.3 percent for the 6th graders.

The mean hours spent with each of the three types of instructor by reading CE selectees and non-selectees are exhibited in Figure 5-4. While CE selectees, particularly in the lower three grades, receive fewer hours of reading services provided by the classroom teachers than the non-selectees, they spent substantially more mean hours with the special teachers across all six grades. Compared with their non-selectee peers, CE selectees in grades 1 and 2 receive

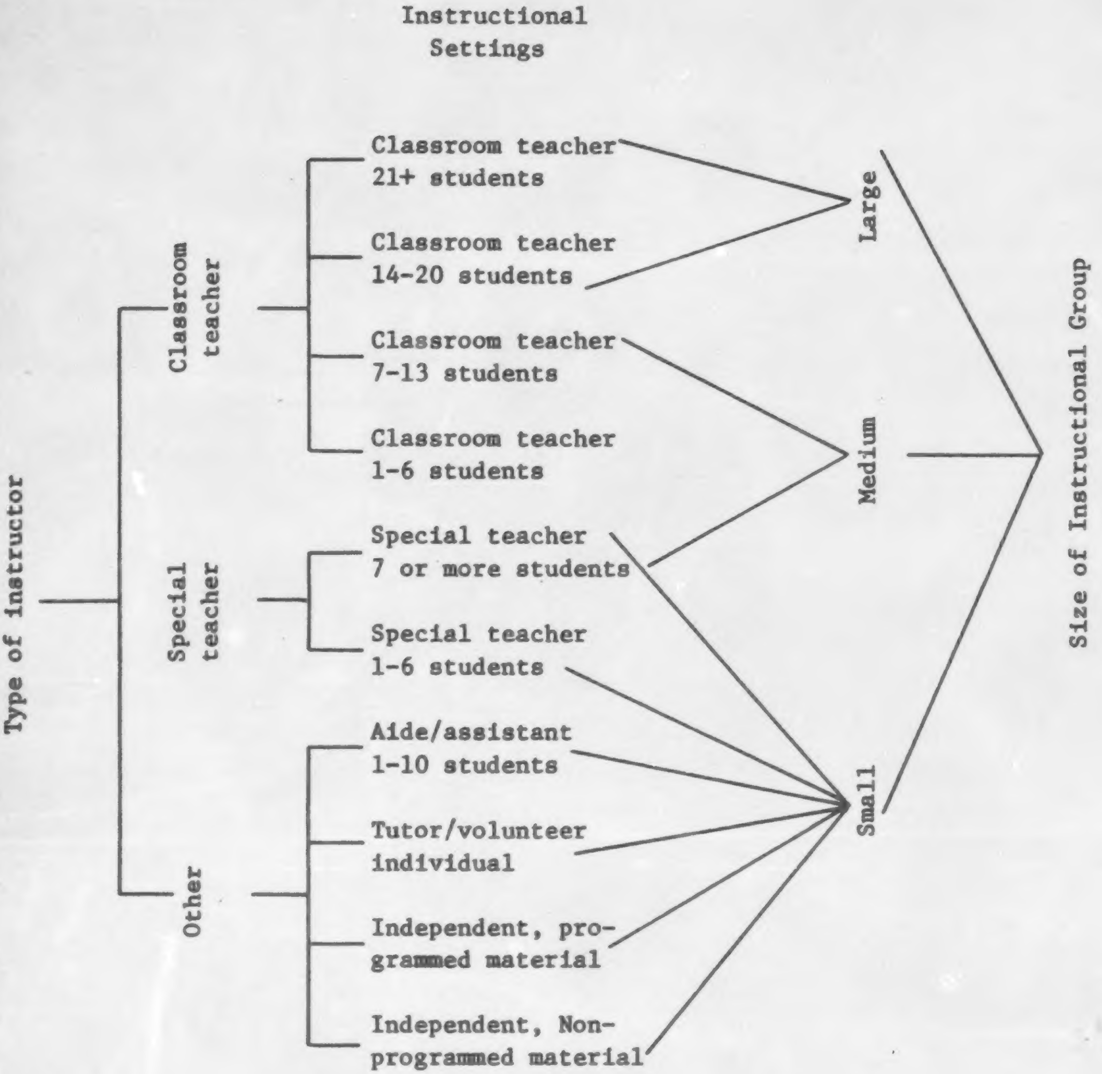

Instructional Settings
Type of instructor
Classroom teacher
Special teacher
Other
Classroom teacher 21+ students
Classroom teacher 14-20 students
Classroom teacher 7-13 students
Classroom teacher 1-6 students
Special teacher 7 or more students
Special teacher 1-6 students
Aide/assistant 1-10 students
Tutor/volunteer individual
Independent, programmed material
Independent, Non-programmed material
Large
Medium
Small
Size of Instructional Group

Figure 5-1

Descriptions of the Ten Instructional Settings for Reading and Math Services

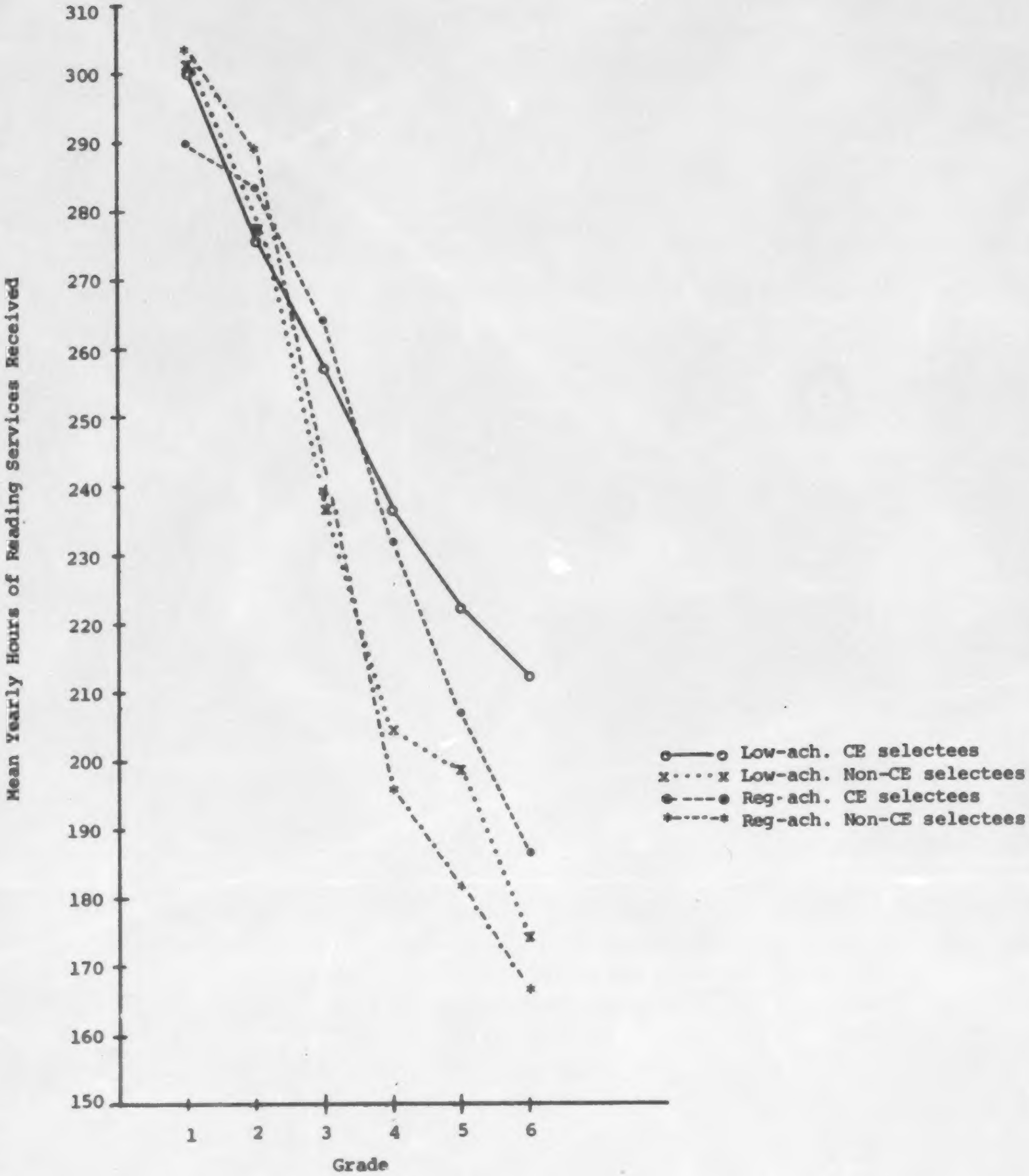


Figure 5-2

Mean Yearly Hours of Reading Instructional Services Received by CE Selection, Achievement Level, and by Grade (Based on Students in CE Schools)

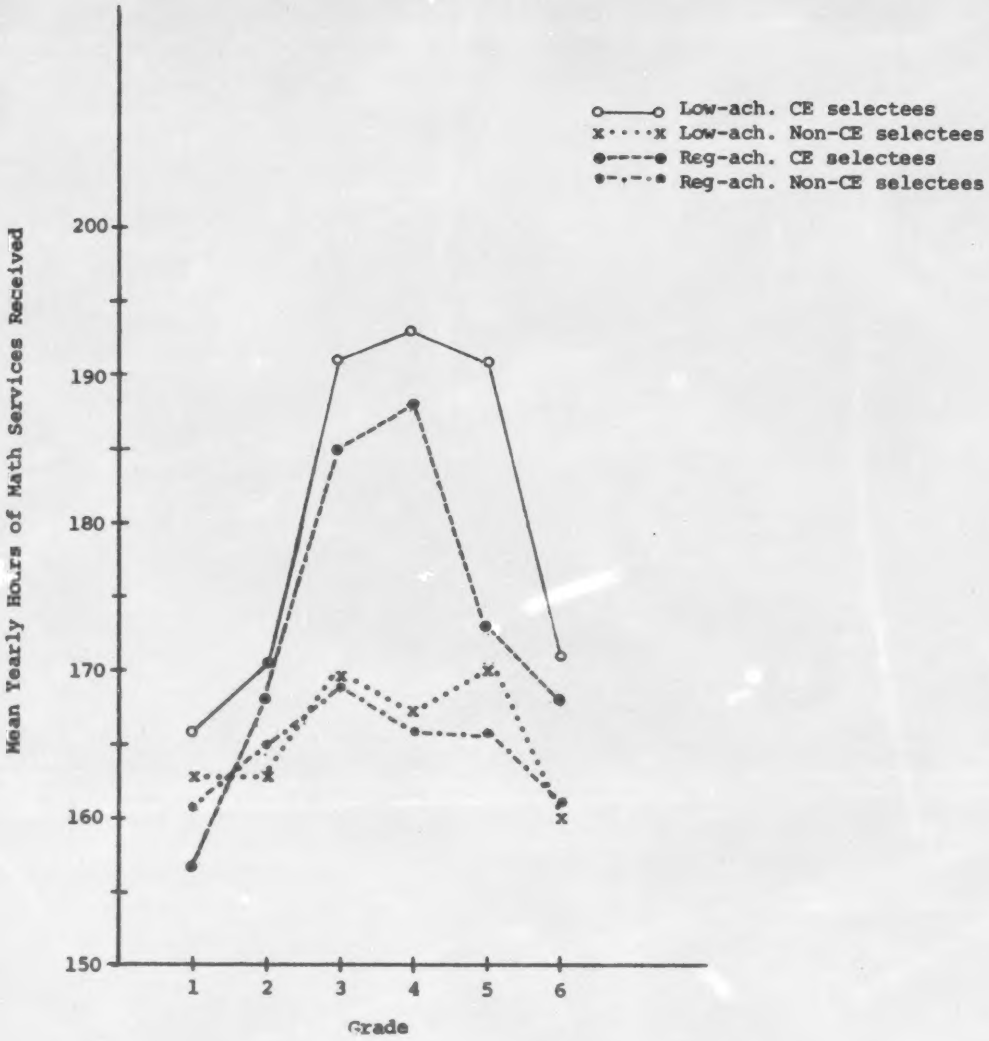
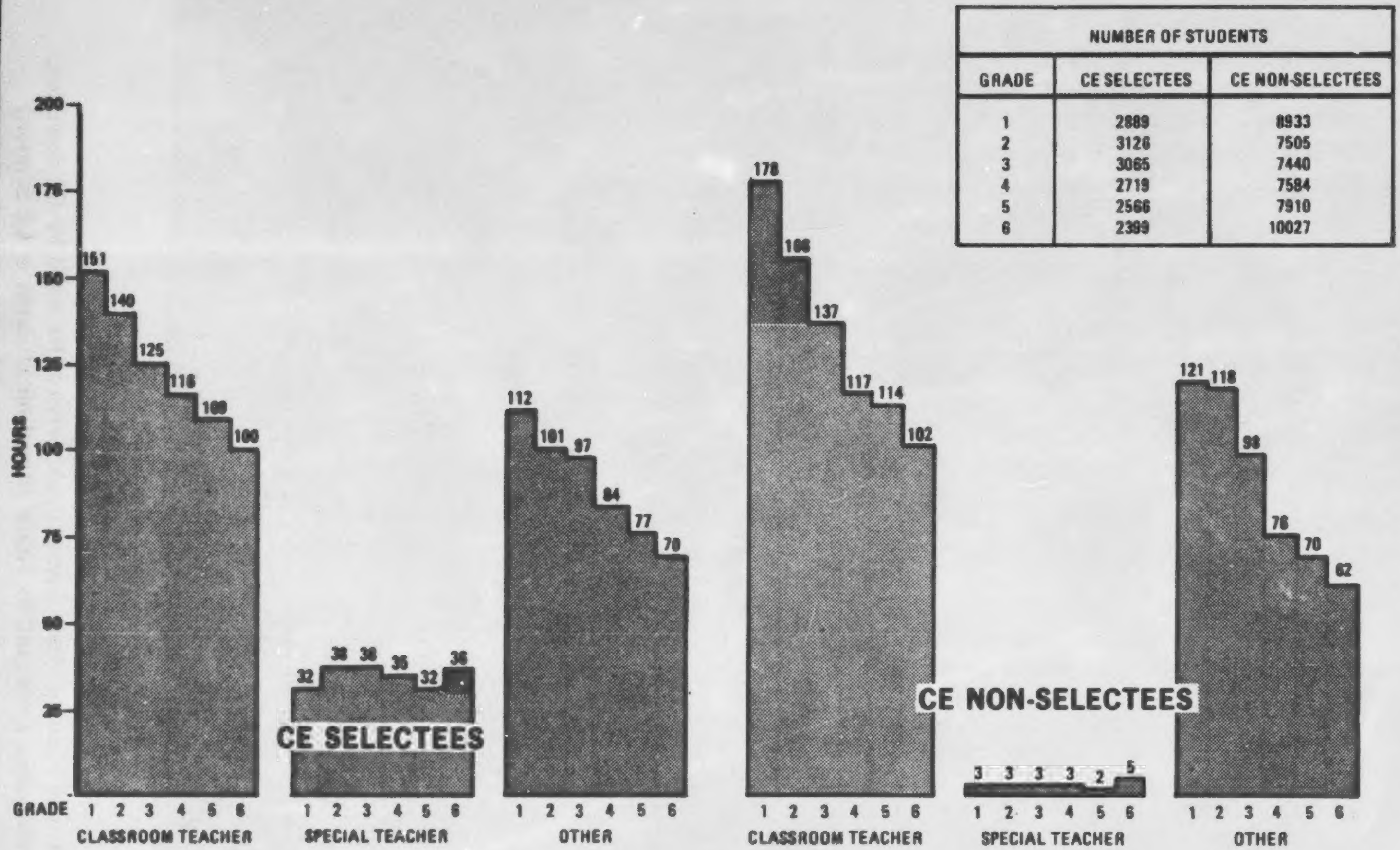


Figure 5-3

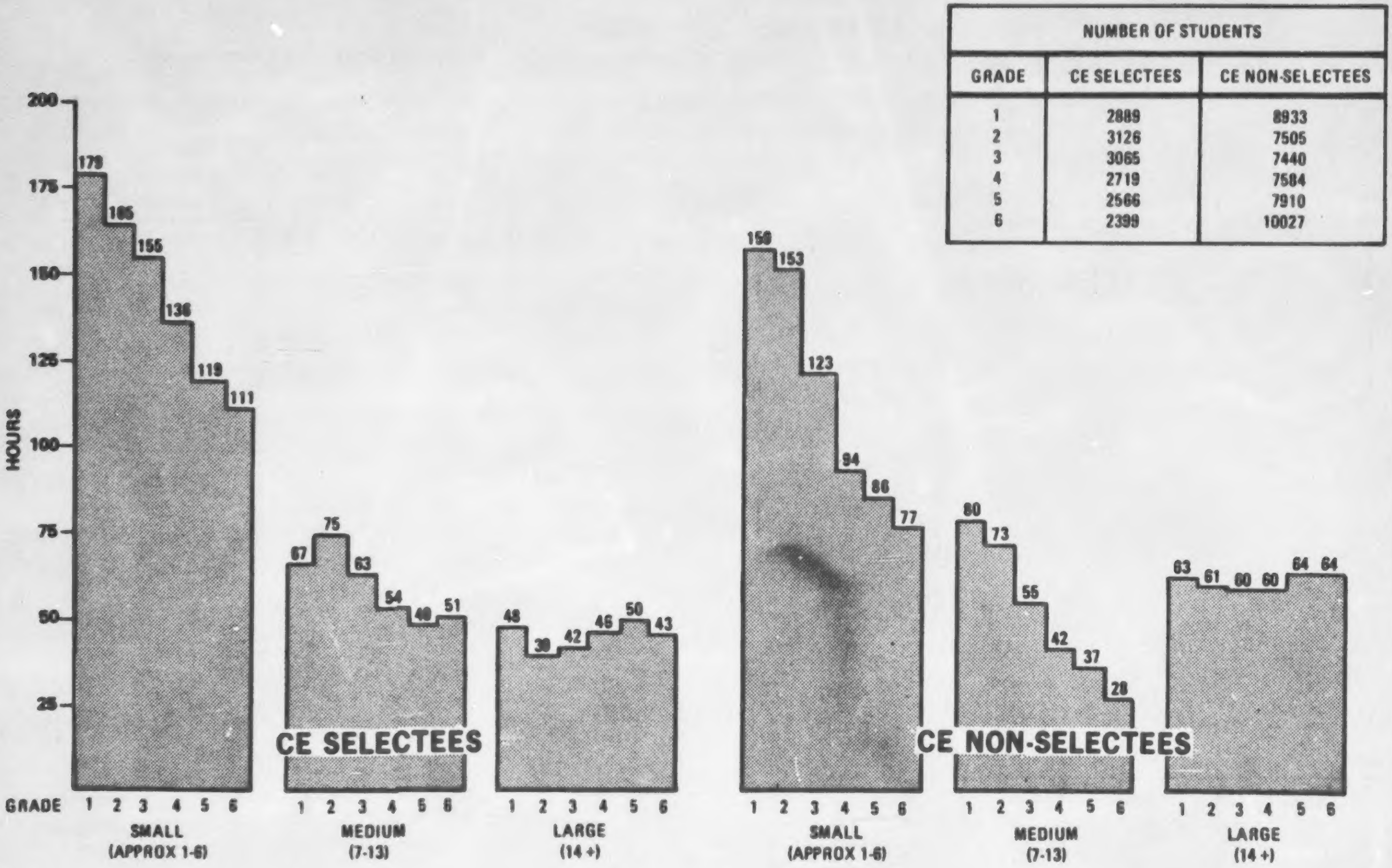
Mean Yearly Hours of Math Instructional Services Received by CE Selection, Achievement Level, and by Grade (Based on Students in CE Schools)



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	2889	8933
2	3126	7505
3	3065	7440
4	2719	7584
5	2566	7910
6	2399	10027

Figure 5-4

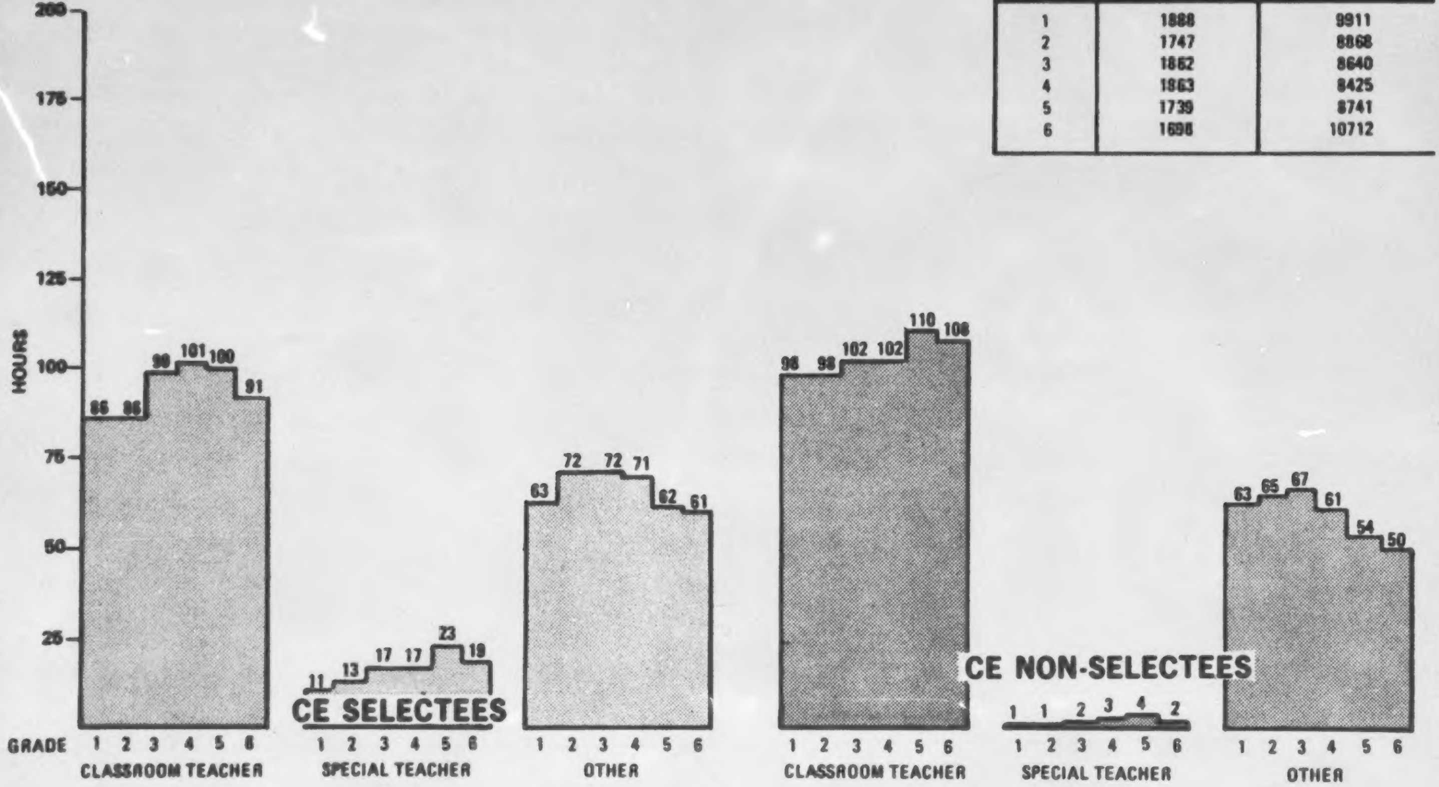
Mean Hours per Year of Reading Instructional Services Received by Students in CE Schools (Type of Teacher)



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	2889	8933
2	3126	7505
3	3065	7440
4	2719	7584
5	2566	7910
6	2399	10027

Figure 5-5

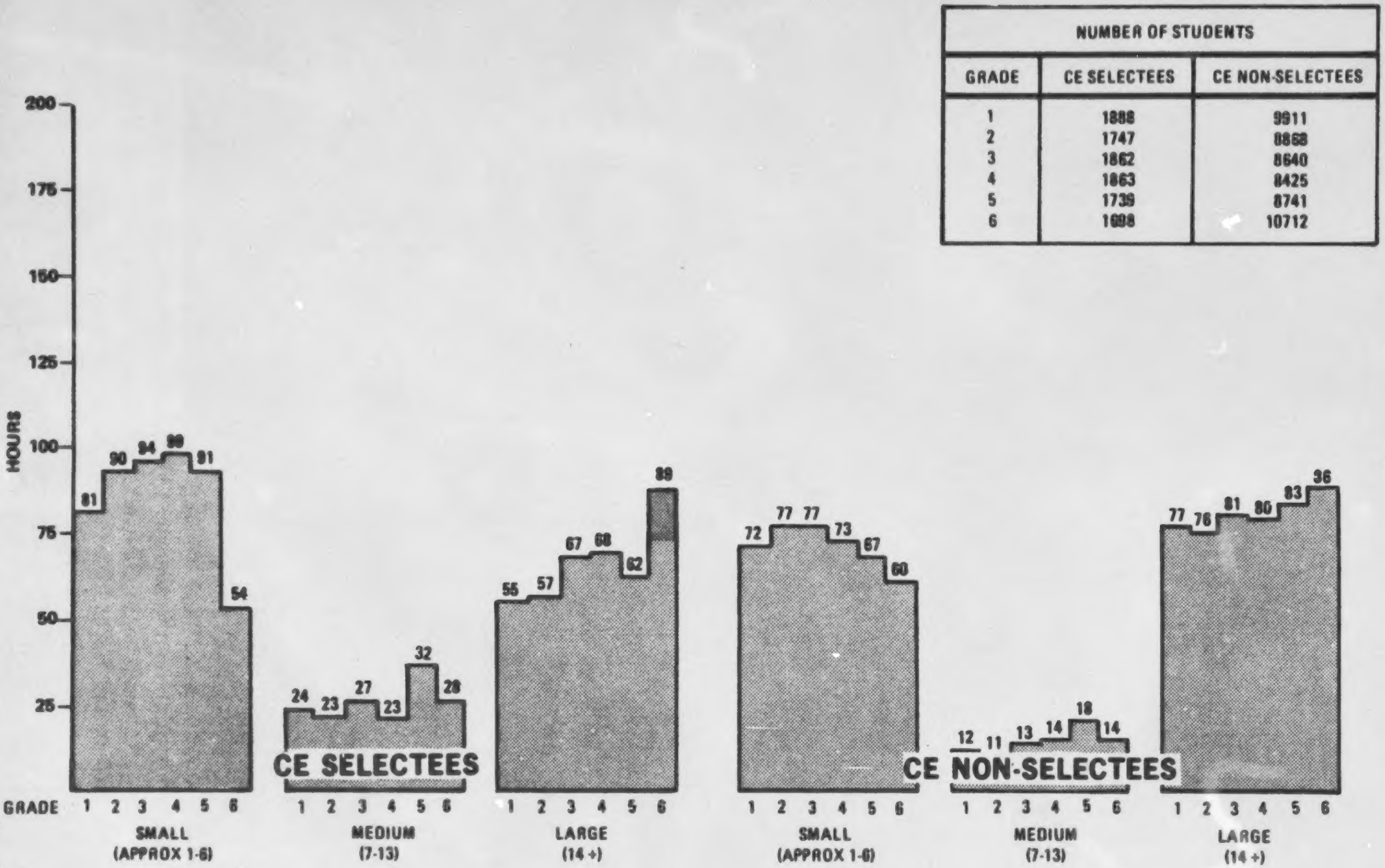
Mean Hours per Year of Reading Instructional Services Received by Students in CE Schools
(Size of Instructional Group)



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	1888	9911
2	1747	8868
3	1862	8640
4	1863	8425
5	1739	8741
6	1698	10712

Figure 5-6

Mean Hours per Year of Mathematics Instructional Services Received by Students in CE Schools (Type of Teacher)



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	1888	9911
2	1747	8868
3	1862	8640
4	1863	8425
5	1739	8741
6	1698	10712

Figure 5-7

Mean Hours per Year of Mathematics Instructional Services Received by Students in CE Schools (Size of Instructional Group)

Table 5-1

Mean Hours per Year of Reading and Mathematics Instructional Services Received by Students in CE Schools

Selection	Gr. 1	Gr. 2	Gr. 3	Gr. 4	Gr. 5	Gr. 6
Reading						
CE Selectees	295	279	260	235	218	205
CE Non-Selectees	302	286	239	198	186	169
Mathematics						
CE Selectees	161	170	189	191	184	170
CE Non-Selectees	162	164	169	166	167	161

fewer hours of reading services delivered in a form other than direct instruction by classroom or special teachers. This difference in hours of such instruction between selectees and non-selectees reverses its direction in grades 4, 5, and 6, while the difference in grade 3 is negligible.

On the basis of hours spent in each of the three sizes of instructional groups, the data in Figure 5-5 show higher mean hours of instruction in small groups for selectees than for non-selectees at the same grade level. Except for grade 1, the mean hours of instruction in medium-size groups attended by selectees also exceed those by non-selectees. On the other hand, non-selectees tend to receive more hours of instruction in large groups than their selectee peers.

Comparison of Math Instructional Services Received by Math CE Selectees and Non-Selectees. Referring back to Table 5-1, we find a tendency for math CE selectees to receive more hours of math instructional services than non-selectees in CE schools. The only exception is for grade 1 where practically no difference is detected. The increments of mean hours received by CE selectees over the hours received by non-selectees range from a low of 3.7 percent at grade 2 to a high of 15.1 percent at grade 4. For the upper three grades, the percentages of increased hours are smaller than the respective figures for reading services. This finding probably reflects a somewhat more intensive effort in reading CE than in math.

The mean hours per year of mathematics instruction by type of instructor are displayed in Figure 5-6. As in reading, the data clearly indicate a trend for CE selectees to receive more hours of math instruction from special teachers than non-selectees. Across all six grades, non-selectees in CE schools have little exposure to math instruction by special teachers, about 1 to 4 hours per year on the average. CE selectees and non-selectees do not differ much in average hours of math instruction received from classroom teachers. Combining math services delivered in the forms of assistance by aides, work with tutors, or independent work, CE selectees tend to receive more hours than do their non-selectee peers, with an exception in grade 1 where no difference in mean hours was found.

Turning to size of instructional group, Figure 5-7 gives the yearly mean hours of math instruction received in each category of the group size by CE selection and by grade. The data

178

indicate that CE selectees on the average attend more hours of small-group math instruction than non-selectees, with an exception at grade 6 where the difference is small. Looking at medium-group instruction, we find a consistent result across all grades. The average number of hours per year for CE selectees is about twice that for non-selectees. Further inspections of Figure 5-7 suggest that the increased hours spent by CE selectees in small- and medium-group instructions result in some decrease in hours of large-group instruction.

In summary, the major differences in reading and math instructional services received by CE selectees and non-selectees in CE schools are as follows:

- On the average, CE selectees receive more total hours of reading and math instructional services than non-selectees in CE schools. Exceptions are found in grades 1 and 2 for reading, and grade 1 for math. In all these cases, the differences are either small or negligible.

- With respect to type of instructor involved, CE selectees receive substantially more hours of instruction from special teachers than non-selectees. The finding applies to all six grades and both subject areas.

- Along the dimension of size of instructional group, the general tendency is for CE selectees to receive more hours of instructional services in small and medium groups, and less in large groups than their non-selectee peers. Exceptions are found in two cases. For grade 1, the average hours of medium-group instruction received by reading CE selectees is less than non-selectees. For grade 6, math CE selectees receive slightly fewer hours of small-group instruction and a few more hours of large-group instruction, compared with non-selectees.

Finally, it should be remarked that although reading CE selectees on the average receive slightly fewer hours of reading instructional services than non-selectees in grades 1 and 2, the results may not be interpreted as evidence of violating the Title I regulations concerning "supplement not supplant". In the first place, the issue focuses on the allocation of funds rather than the hours of services. Second, the service data employed in the analyses are hours *attended* instead of hours *offered*. It is likely that there is a contaminating effect of a lower attendance rate for CE selectees. Third, the analyses combine Title I and Other CE selectees into one group: CE selectees. Some CE funds are provided without the specific requirement to 'supplement', not 'supplant' regular services. In addition, the student-level data do not differentiate between services provided with CE funds and those with regular funds. Thus there are no pertinent results for addressing the issue. Last, and most important at these two grades, CE selectees do receive substantially more hours of instruction from special teachers and spend more hours in small-group instruction than non-selectees. This finding supports the contention that instructional services of 'better quality', i.e., more specialized and more intensive, are provided to CE selectees in lieu of more hours of exposure.

Comparisons with Students in Non-CE Schools

To further understand the nature of compensatory services, the instructional services received by CE selectees are compared with those received by students in non-CE schools.

Non-CE schools are expected to differ in some ways (poverty concentration, concentration of low-achieving students, etc.) from CE schools and may thus provide different services to their students. In addition, services received by non-selectees in CE schools might reflect some 'spill-over' effects of CE services. For these reasons, services received by students in non-CE schools constitute useful data for comparison.

To make the comparisons, parallel analyses were performed separately for reading and math at each grade level. The analyses are essentially similar to those presented in the preceding section, but with differences in two aspects:

- The comparison group comprises students from non-CE schools instead of non-selectees in CE schools.
- School poverty concentration (estimated percentage of students at or below poverty level) is employed as an additional control variable.

For the present analyses, school poverty concentration (PC) is divided into three categories: low (0-9%), medium (10-24%), and high (25% and above). Thus, twelve analysis groups were initially formed for each grade and each specific subject area (see page 140 for schematic).

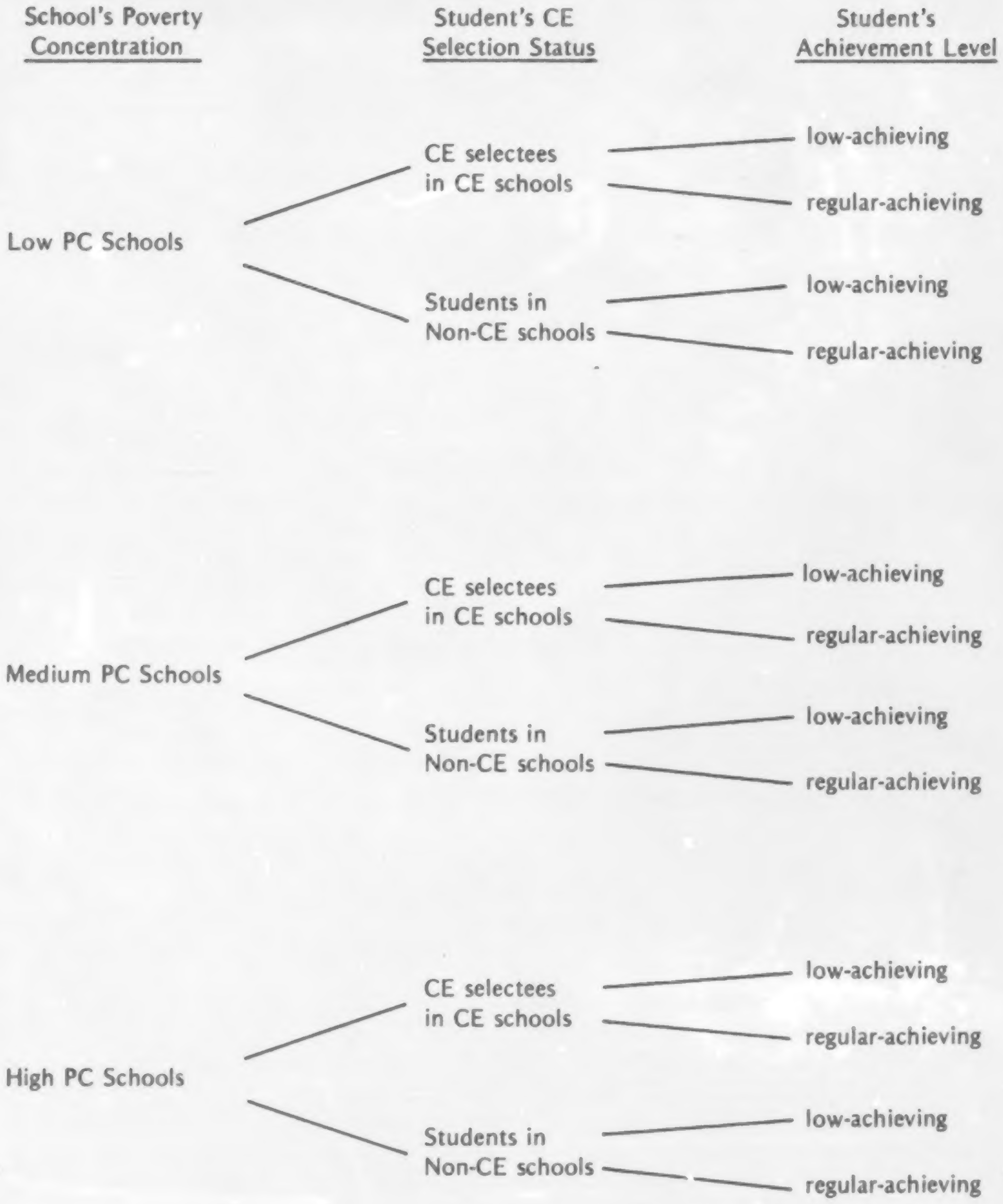
Inspections of the sample size for each of the twelve groups quickly reveal the expected rare occurrence of non-CE schools in the high PC category. For this reason, the subsequent discussions will ignore this category of non-CE schools. The complete group means of yearly hours of total reading instructional services received as well as hours of services received in each of the ten instructional settings (see Figure 5-1) are given in Table C-3, by grade. Table C-4 contains similar data for mathematics. These two tables are found in Appendix C.

Careful examination of the data presented in Tables C-3 and C-4 leads to the following conclusions:

- Controlling for the school's PC category, the major differences in receipt of services among the four subgroups are found between the dichotomies of CE selection status. The differences between the dichotomies of achievement level are comparatively smaller.
- The profiles describing the services received by the groups may be summarized in two dimensions: 'type of instructor', and 'size of instructional group'. A better picture of the data emerges as a result of grouping the ten instructional settings into three categories along each dimension.

With these observations, the remainder of this section will follow the strategy of the previous section and concentrate on presentations of the results using the two summary variables for describing service profiles. The discussion on comparisons of services received will be restricted to those between CE selectees and students in non-CE schools, ignoring the division by achievement level.

Schematic: Formation of Analysis Groups


School's Poverty Concentration
Student's CE Selection Status
Student's Achievement Level
Low PC Schools
CE selectees in CE schools
low-achieving
regular-achieving
Students in Non-CE schools
low-achieving
regular-achieving
Medium PC Schools
CE selectees in CE schools
low-achieving
regular-achieving
Students in Non-CE schools
low-achieving
regular-achieving
High PC Schools
CE selectees in CE schools
low-achieving
regular-achieving
Students in Non-CE schools
low-achieving
regular-achieving

The mean number of hours of reading services received in each category of the two summary variables are displayed in a series of bar graphs, Figures 5-8 to 5-11, by CE selection, and grade, for the low and medium categories of school poverty concentration. Similar graphs, Figures 5-12 to 5-15, present the corresponding data for mathematics. Additionally, Table 5-2 gives the group means of total hours of reading and math instructional services received during the school year 1976-1977.

Comparisons of Reading Instructional Services Received by Reading CE Selectees and Students in Non-CE Schools. Within the category of low-PC schools, comparisons of means given in Table 5-2 show a consistent tendency for all six grades for CE selectees to receive more hours of reading services than students in non-CE schools. The advantage for CE selectees ranges from an increase of 4.0 percent at grade 1 to 21.3 percent at grade 3, using average hours for students in non-CE schools as the base line. A different picture is observed for the category of medium-PC schools. Within this category, CE selectees tend to receive more hours in grades 1, 2 and 4 than students in non-CE schools, but the trend is reversed in grades 3, 5, and 6. This phenomenon is probably due to the insufficient sample sizes for students attending non-CE schools of medium poverty concentration. Although our primary interest has been to learn how the services received by CE selectees compare with those by students attending similar schools where CE is not available, such comparisons appear impractical for medium- and high-PC schools because non-CE schools mostly have low poverty concentration. In view of the extremely unbalanced sample sizes (see Table C-3), readers are advised not to draw hasty conclusions regarding differences in receipt of services between CE selectees and students in non-CE schools for the medium- and high-PC categories.

Combining the three PC categories, we find that CE selectees on the average receive more hours of reading services than students in non-CE schools, except for grade 1 where the difference is small. This result and those in the previous section confirm that CE selectees generally receive more hours of services than non-selectees.

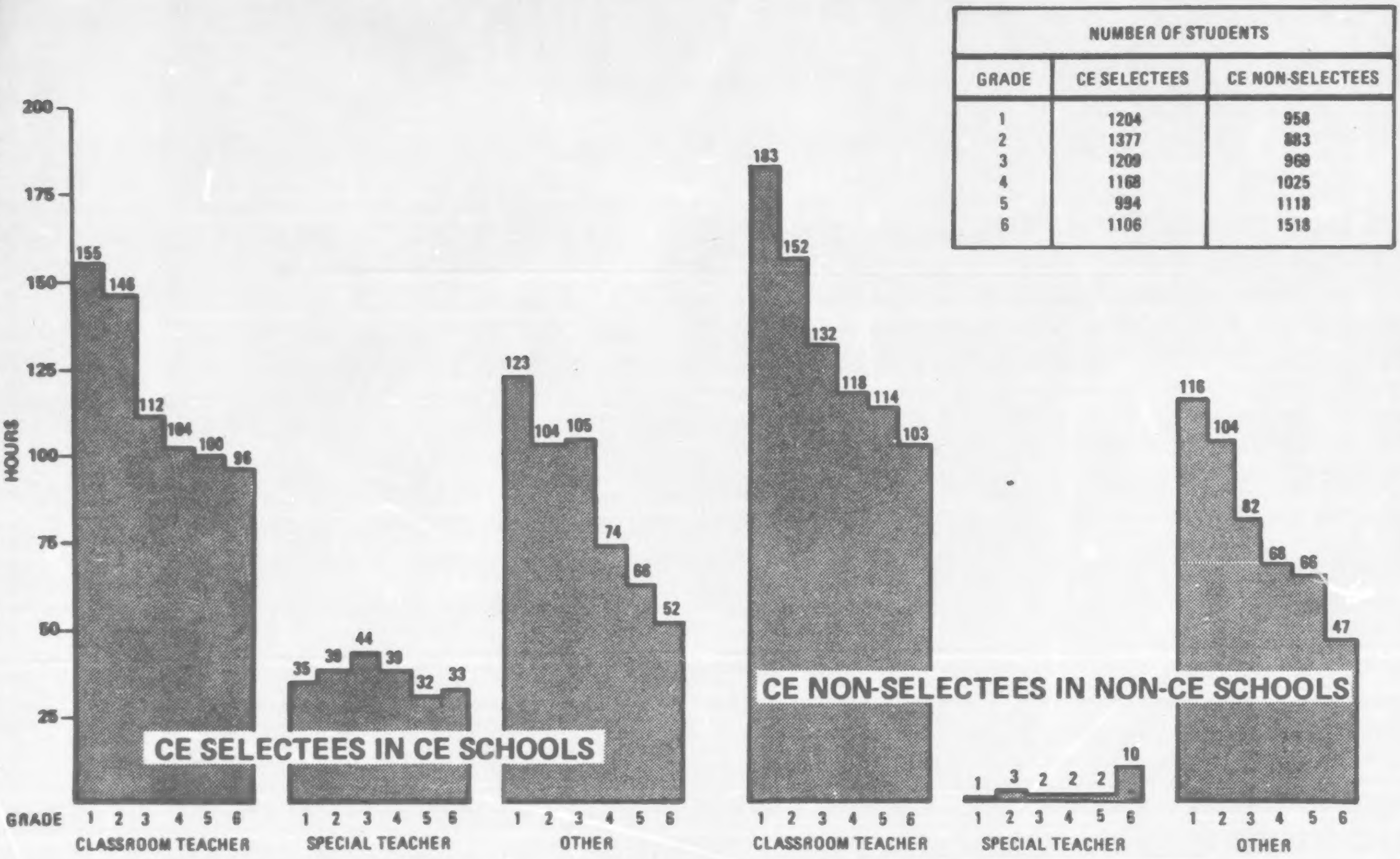
Among the CE selectees in grades 4, 5, and 6, the data in Table 5-2 indicate an increasing trend in receipt of reading services with the increase of the school poverty concentration. However, this finding does not apply to the lower three grades, where the data show inconsistent patterns.

Regarding the teaching personnel involved, the yearly mean hours of instruction received from the three types of instructors are shown in Figures 5-8 and 5-9 for schools of low and medium poverty concentration, respectively. For both low- and medium-PC categories, reading CE selectees receive markedly more hours of instruction by special teachers than do students in non-CE schools. Students in non-CE schools receive very little instruction from special teachers except for the 6th-graders in the low-PC schools. Instead, they spend more hours with classroom teachers for reading instruction as compared with the selectees. There are no consistent results across grades--particularly in the medium-PC category--with respect to differences in receipt of other services not involving direct instruction by classroom or special teachers.

Table 5-2

Mean Hours per Year of Reading and Mathematics Instructional Services Received by CE Selectees in CE Schools and CE Non-Selectees in Non-CE Schools, by Poverty Level of School

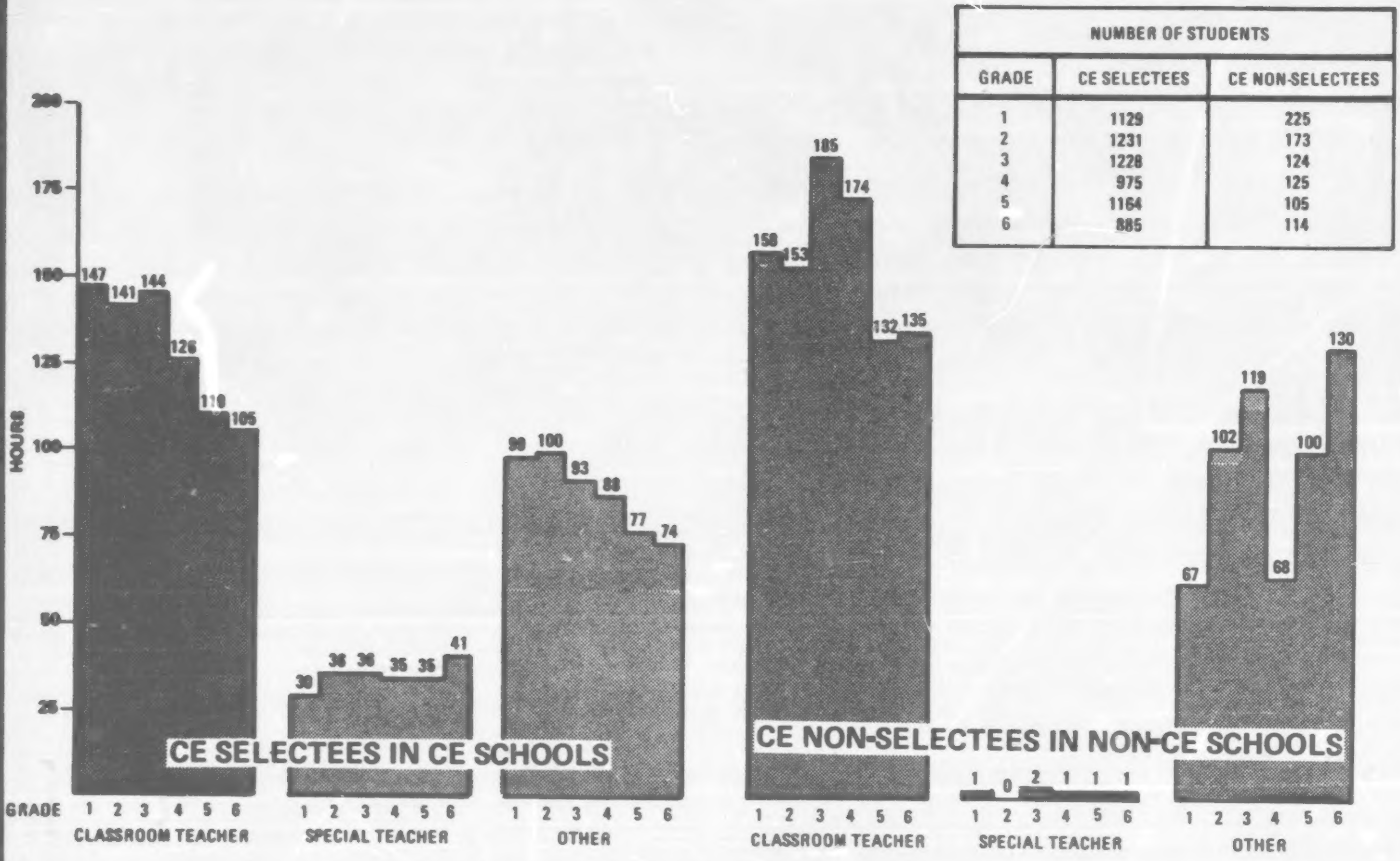
Selection Group	Grade 1	2	3	4	5	6
Reading						
Low Poverty Concentration						
Reading CE Selectees	313	290	262	216	198	181
Students in Non-CE Schools	301	259	216	188	181	160
Medium Poverty Concentration						
Reading CE Selectees	275	277	272	248	223	220
Students in Non-CE Schools	226	255	305	243	232	265
High Poverty Concentration						
Reading CE Selectees	290	256	233	248	246	239
Students in Non-CE Schools	275	N/A	175	N/A	N/A	N/A
Total						
Reading CE Selectees	295	279	260	235	218	205
Students in Non-CE Schools	287	258	226	194	185	167
Mathematics						
Low Poverty Concentration						
Math CE Selectees	147	163	171	178	167	154
Students in Non-CE Schools	167	170	165	171	166	160
Medium Poverty Concentration						
Math CE Selectees	157	176	203	186	192	181
Students in Non-CE Schools	133	143	197	192	196	187
High Poverty Concentration						
Math CE Selectees	189	165	189	214	202	184
Students in Non-CE Schools	137	N/A	103	N/A	N/A	N/A
Total						
Math CE Selectees	161	170	189	191	184	170
Students in Non-CE Schools	160	165	168	173	169	163



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	1204	958
2	1377	883
3	1209	969
4	1168	1025
5	994	1118
6	1106	1518

Figure 5-8

Mean Hours per Year of Reading Instructional Services Received by CE Selectees in Low-Poverty CE Schools, and Non-Selectees in Low-Poverty Non-CE Schools (Type of Teacher)



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	1129	225
2	1231	173
3	1228	124
4	975	125
5	1164	105
6	885	114

Figure 5-9

Mean Hours per Year of Reading Instructional Services Received by CE Selectees in Medium-Poverty CE Schools, and Non-Selectees in Medium-Poverty Non-CE Schools (Type of Teacher)

Data for the distributions of reading services received by 'size of instructional groups' (see Figure 5-1 for classifications of group size) for the low- and medium-PC schools are presented in Figures 5-10 and 5-11, respectively. Within the low-PC category, it may be seen from Figure 5-10 that reading CE selectees on the average receive considerably more hours of instruction in small- and medium-size groups than students in non-CE schools. The two exceptions are found in grades 1 and 2 where the differences are comparatively small. On the other hand, students in non-CE schools spend substantially more hours in large-group instruction.

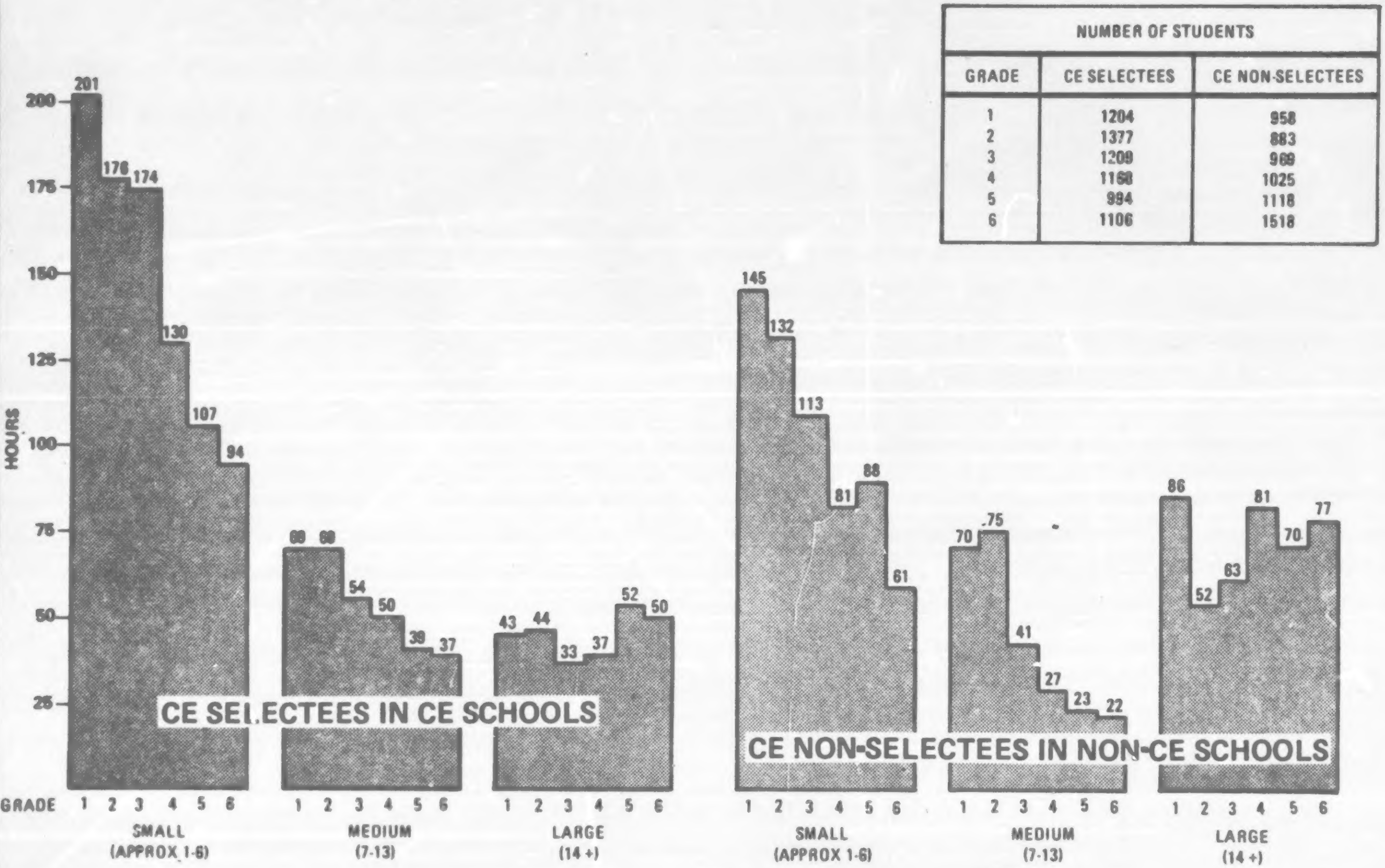
The picture for the medium-PC category is more complex. In comparison with their peers attending non-CE schools, there is a tendency for reading CE selectees in grades 2, 4, 5, and 6 to receive more hours of reading instructional services in medium-size groups and less hours in large groups. Only at grades 1 and 2 do we observe an advantage for CE selectees with respect to the amount of small-class instruction received. For grades 5 and 6, students in non-CE schools spend considerably more time in small-group instruction. Referring to Table C-3 in the appendix this latter finding, though somewhat disturbing, may be explained by the greater number of hours they spend doing independent work and getting instruction from their regular teacher in small classes. The size of regular classes is often determined by a school's general condition, e.g., number of students in a given grade, rather than the characteristics of individual students. Moreover the present comparison involves different schools for selectees and non-selectees. It should be emphasized that due to the lack of a sufficient sample size for students in non-CE schools, and the large within selection-group variation, these results for the medium-PC category may be regarded as inconclusive.

Finally, the readers are reminded once again that the comparison between the services received by CE selectees and those by students in non-CE schools of high-PC cannot be made because of the unavailability of data.

Comparisons of Mathematics Instructional Services Received by Math CE Selectees and Students in Non-CE Schools. Examining the group means in Table 5-2, we find, across the grades and categories of PC, inconsistent patterns of differences in total hours of math services received between CE selectees and students in non-CE schools. In the low-PC category, the mean hours for math CE selectees are higher in grades 3 and 4, and lower in grades 1, 2, and 6 than those for their peers in non-CE schools. Practically no difference was found for grade 5, and the differences are mostly insubstantial for other grades. For the medium-PC schools, CE selectees in the first three grades, particularly grades 1 and 2, receive more average total hours of math services than do students in non-CE schools. For the upper grades, the direction in differences changes to favor students in non-CE schools, but the magnitude of differences is comparatively small.

Of the three categories of poverty concentration, the group means for CE selectees increase with the extent of PC in grades 1, 4, 5, and 6. In the other two grades, the relationship is not monotonic – means for CE selectees in medium-PC schools are largest.

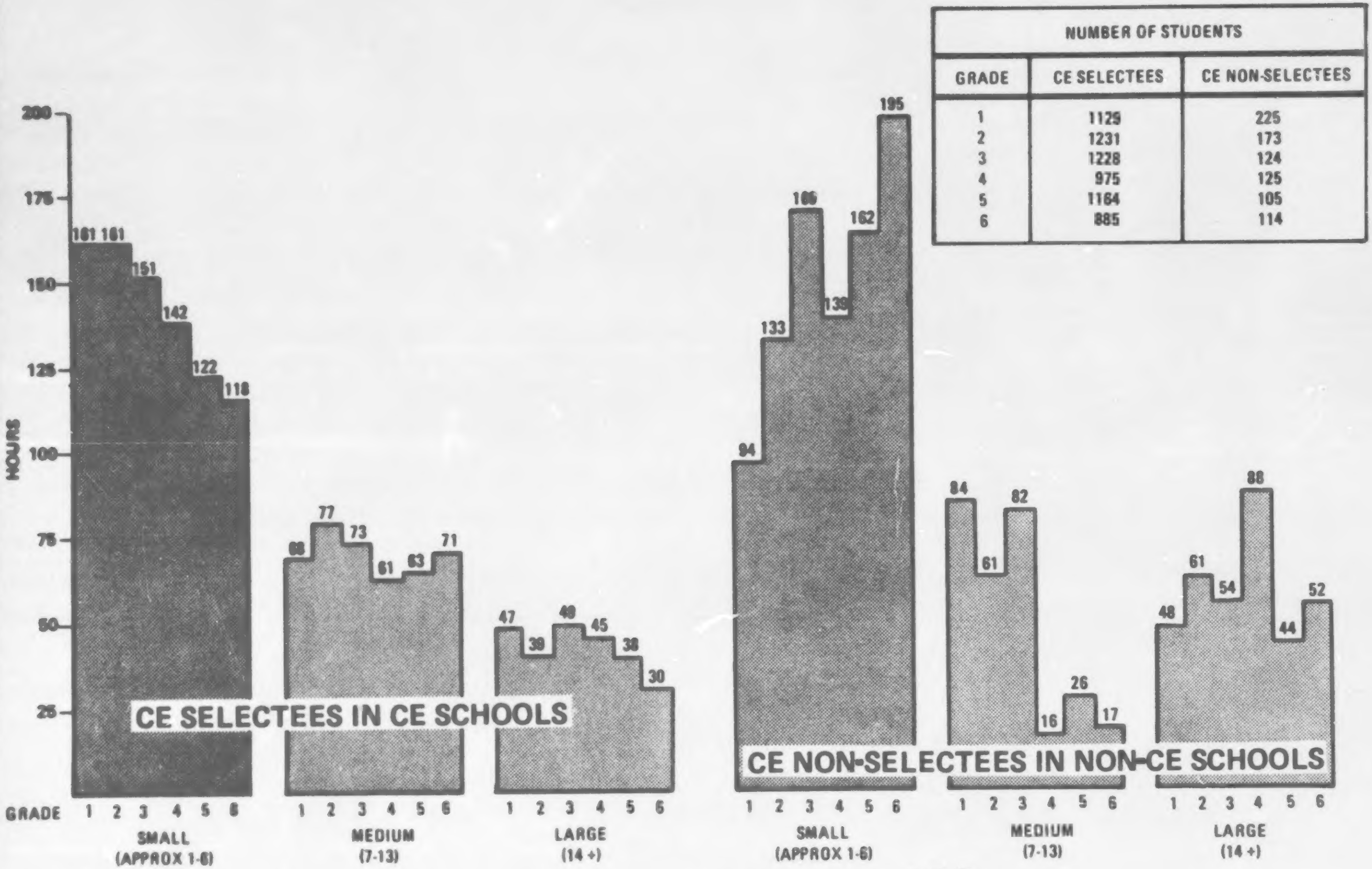
Combining the three categories of PC, it becomes clear that math CE selectees, on the average, receive a greater amount of math services per year than do students attending non-CE schools. However, the differences are generally not large.



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	1204	958
2	1377	883
3	1209	969
4	1168	1025
5	994	1118
6	1106	1518

Figure 5-10

Mean Hours per Year of Reading Instructional Services Received by CE Selectees in Low-Poverty CE Schools, and Non-Selectees in Low-Poverty Non-CE Schools (Size of Instructional Group)



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	1129	225
2	1231	173
3	1228	124
4	975	125
5	1164	105
6	885	114

Figure 5-11

Mean Hours per Year of Reading Instructional Services Received by CE Selectees in Medium-Poverty CE Schools, and Non-Selectees in Medium-Poverty Non-CE Schools (Size of Instructional Group)

For comparisons of math CE selectees and their peers in non-CE schools, with respect to time spent with various types of teaching staff, data in Figures 5-12 and 5-13 reveal trends that are similar to those found in reading services. Within the low-PC category, math CE selectees typically receive fewer hours of math instruction from classroom teachers, but more hours of other math services not directly provided by teachers. With the exception of grade 6, students in non-CE schools seldom receive math instruction from special teachers. In contrast, CE selectees spend 5 (at grade 1) to 10 (at grade 5) percent of their math instructional hours with special teachers.

Turning to the medium-PC category the differences in receipt of math instruction by special teachers between the two groups of students are more pronounced than in the low-PC category. On the average, 8 (at grade 1) to 12.5 (at grade 5) percent of total math services are received by math CE selectees in the form of instruction by special teachers. Across all six grades, students in non-CE schools have practically no exposure to instruction by special teachers. On the basis of instruction by classroom teacher, CE selectees in grades 3 to 6 tend to receive fewer hours than do their non-CE school peers, while there are only negligible differences in grades 1 and 2. The direction of differences in receipt of 'other' math services changes with grades unsystematically.

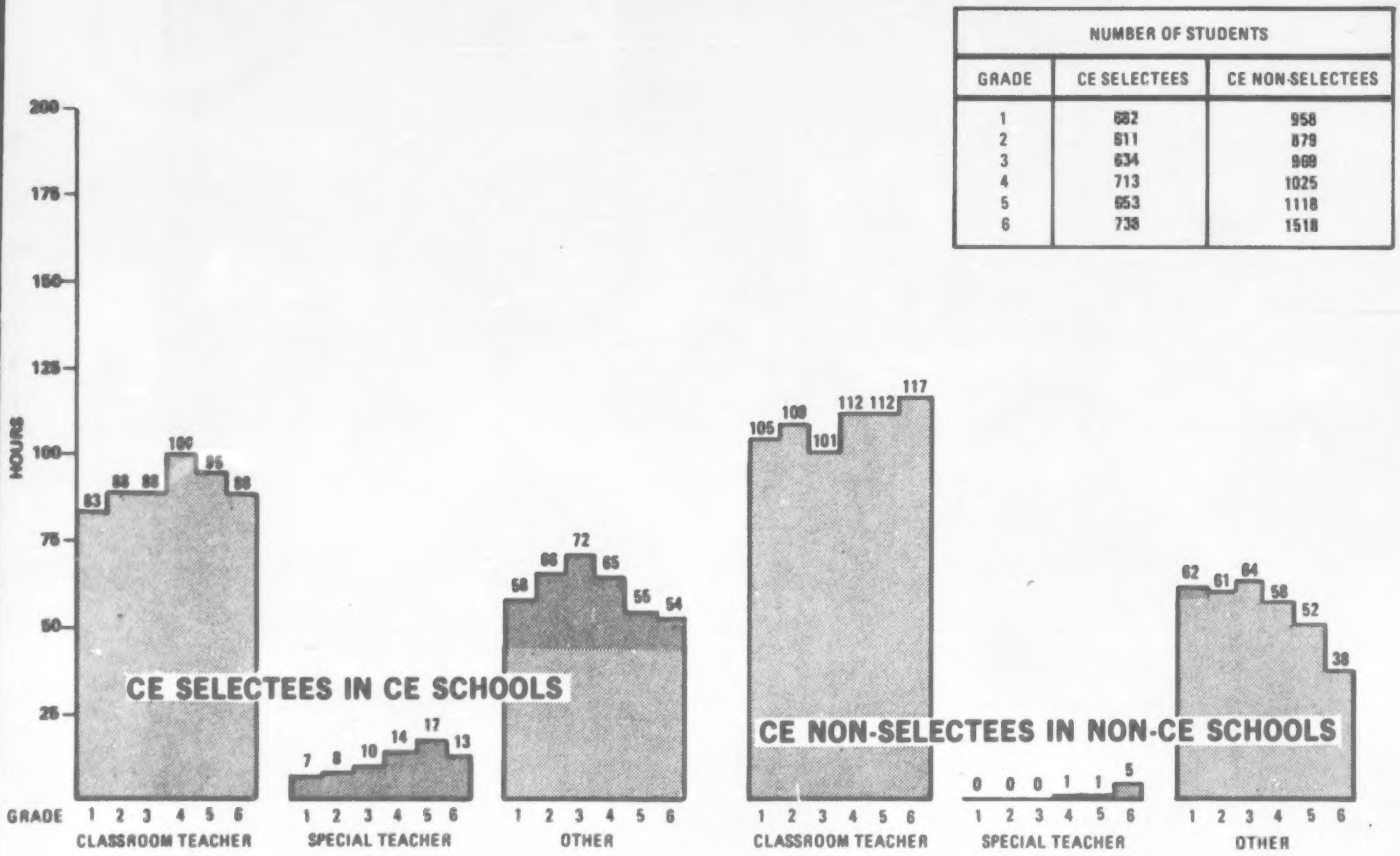
Figure 5-14 displays the distributions of math services by 'size of instructional group' for the low-PC schools. Similar data for the medium-PC schools are given in Figure 5-15. As in reading, the results for the low-PC schools are clear, and consistent across the six grades. The tendency is for math CE selectees to receive considerably more math instruction in small and medium groups, but less in large groups, in comparison with students in non-CE schools.

Again, comparisons between math CE selectees and their peers attending non-CE schools in the medium-PC category indicate inconsistent patterns across the grades. The only systematic trend is in the case of medium-group instruction, for which CE selectees tend to receive more hours than students in comparable non-CE schools.

Summarizing the results presented in this section, the following observations are made:

- On the average, CE selectees receive more total hours of reading/math services than do students in non-CE schools. The advantage for CE selectees is greater in reading than in math. Controlling for school poverty concentration (PC), the data show some differential results between low- and medium-PC categories.

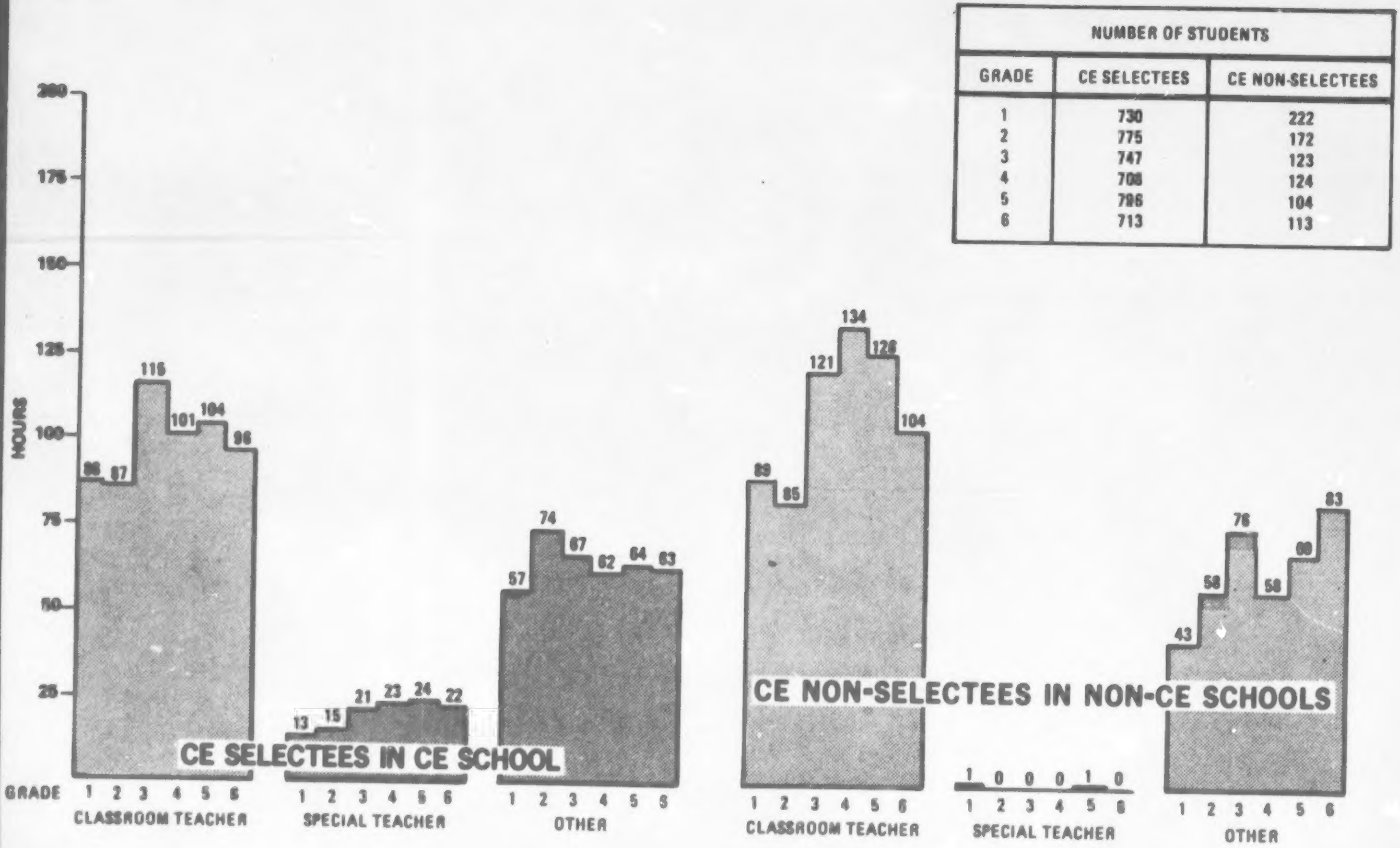
- With respect to type of instructional staff, CE selectees consistently have greater exposure to instruction by special teachers. Students in non-CE schools typically receive a negligible amount of instruction from special teachers, with the only exception of the 6th-graders in the low PC category. The findings are similar for reading and for math.



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	682	958
2	611	879
3	634	969
4	713	1025
5	653	1118
6	738	1518

Figure 5-12

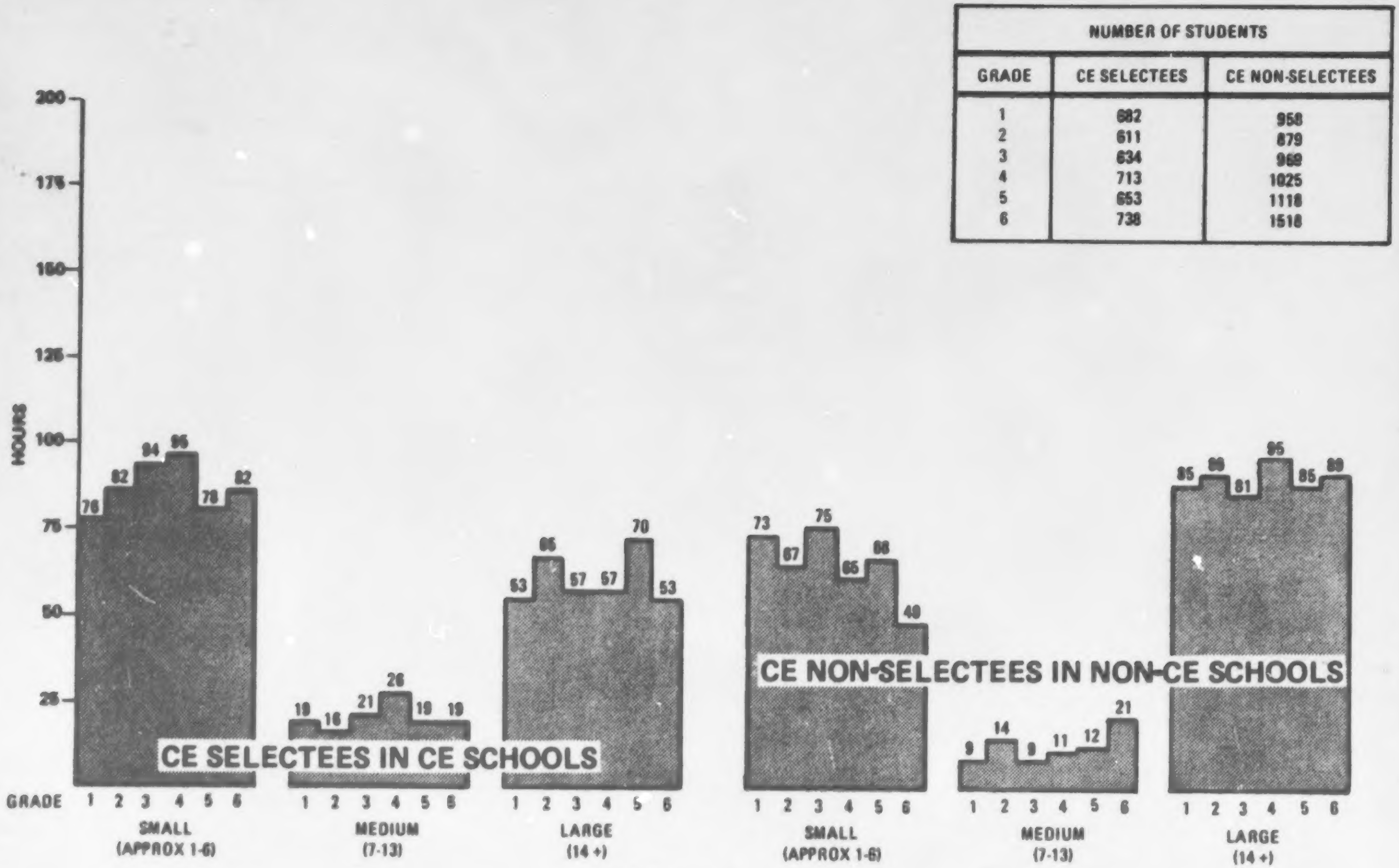
Mean Hours per Year of Mathematics Instructional Services Received by CE Selectees in Low-Poverty CE Schools, and Non-Selectees in Low-Poverty Non-CE Schools (Type of Teacher)



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	730	222
2	775	172
3	747	123
4	708	124
5	796	104
6	713	113

Figure 5-13

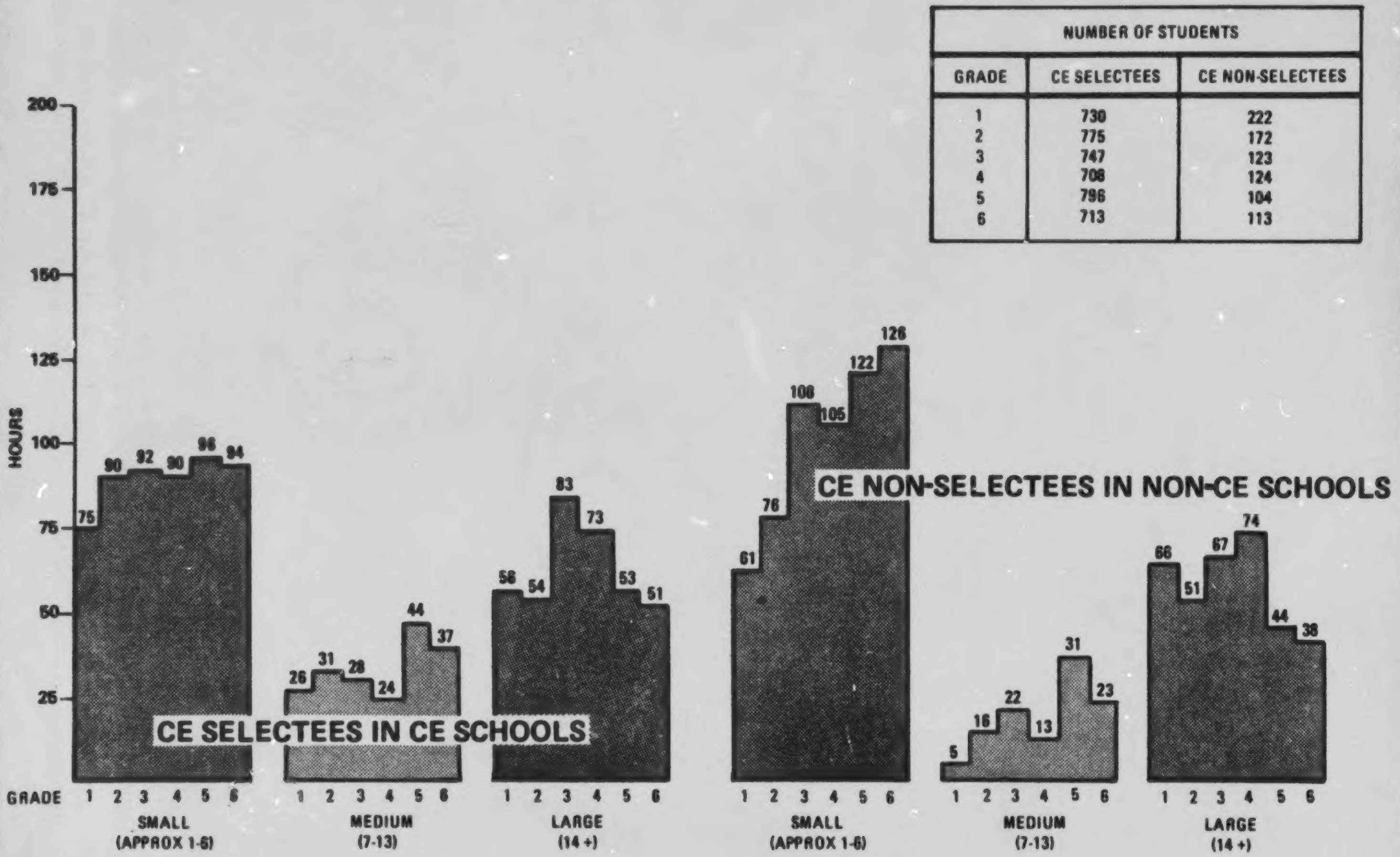
Mean Hours per Year of Mathematics Instructional Services Received by CE Selectees in Medium-Poverty CE Schools, an
Non-Selectees in Medium-Poverty Non-CE Schools (Type of Teacher)



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	682	958
2	611	879
3	634	969
4	713	1025
5	653	1118
6	738	1518

Figure 5-14

Mean Hours per Year of Mathematics Instructional Services Received by CE Selectees in Low-Poverty CE Schools, an
Non-Selectees in Low-Poverty Non-CE Schools (Size of Instructional Group)



NUMBER OF STUDENTS		
GRADE	CE SELECTEES	CE NON-SELECTEES
1	730	222
2	775	172
3	747	123
4	708	124
5	796	104
6	713	113

Figure 5-15

Mean Hours per Year of Mathematics Instructional Services Received by CE Selectees in Medium-Poverty CE Schools, and Non-Selectees in Medium-Poverty Non-CE Schools (Size of Instructional Group)

- For the schools of low poverty concentration, CE selectees tend to receive more hours of small- and medium-group instruction, and less hours of large-group instruction. Where there are exceptions, the differences are small. The results for the medium-PC category are inconsistent across the grades. This is partially due to the small sample of students from non-CE schools in this category. These remarks apply to both reading and math.

- Non-CE schools with high poverty concentration (25% and above) are very rare, virtually non-existent in our Representative Sample of schools. Consequently, it is impossible to make comparisons between the services received by CE selectees attending high-PC schools and those by students from similar schools where no CE is available.

Some general conclusions may now be reached in view of the findings presented in the preceding two sections. With few exceptions, CE selectees receive more hours of reading/math services than non-selectees in CE or non-CE schools. The differences in services received are primarily found in two respects: CE selectees

- tend to receive more instruction by special teachers than non-selectees;

- tend to receive instruction in smaller groups than those for non-selectees.

Non-Participants' Activities While CE Services Are Delivered. Teachers at schools in the Representative Sample were asked to indicate in the Teacher Questionnaire what activities non-participants are engaged in while their CE students participate in compensatory activities. The responses of teachers associated with CE selectees were then analyzed to describe the ways in which CE activities take place. The analyses were performed separately for reading and for math.

Table 5-3 summarizes the data obtained from 2,003 reading teachers who have CE selectees in their classes. The bottom row of the table shows that, in all six grades, 8.8 percent of these teachers did not indicate any of the eight listed activities as alternative activities for non-participants. The non-respondents include those who considered none of the listed activities as applicable to their situation for reasons such as the provision of CE services outside the normal school hours, and possibly also those who failed to respond to the item due to lack of knowledge or who simply did not complete the entire questionnaire. The remaining 1,826 teachers reported an average of 2 to 3 different kinds of activities for their non-CE students while CE participants are engaged in compensatory reading activities.

The most often mentioned alternative for non-participants during reading CE hours is other reading or language arts activities. Of the teachers who have indicated at least one kind of activity for non-participants, 87.5 percent indicated this option. By grade, this percentage reaches a high of 96 percent in the 1st grade and decreases to a low of 77.3 percent in the 6th grade. This finding suggests that across all grades, CE services are frequently delivered during regular instructional hours with different kinds of activities for the participants. Such a practice is more common in the lower grades than in the upper grades. These results offer partial explanations for our earlier finding that in the lower grades reading CE selectees on the average do not receive more hours of reading services than their non-elected peers.

Table 5-3

Percent of Reading Teachers Who Reported that Non-Participants are Involved in Alternative School Activities While Their CE Students Participate in Compensatory Reading Activities

Type of activities in which non-participants are involved **	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5		Grade 6		Total	
	N=346		N=351		N=340		N=292		N=264		N=233		N=1,826*	
	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Coun
Other reading or language arts activities	96.0	332	90.9	319	90.0	306	81.8	239	84.1	222	77.3	180	87.5	1,598
Other reading or language arts activities only	38.7	134	31.6	111	30.0	102	27.7	81	36.0	95	27.9	65	32.2	588
Math activities	32.9	114	32.5	114	28.2	96	28.8	84	23.1	61	26.2	61	29.0	530
Activities related to other subject matter areas	28.3	98	40.7	143	42.6	145	47.9	140	47.7	126	54.9	128	42.7	780
Study time	22.0	76	31.3	110	31.5	107	32.9	96	29.5	78	35.2	82	30.1	549
Student selected activities	34.4	119	30.5	107	29.1	99	20.2	59	20.8	55	21.0	49	26.7	488
Visits to the school library	13.6	47	14.8	52	17.4	59	18.2	53	18.9	50	18.5	43	16.6	304
Physical education activities	2.9	10	5.7	20	4.7	16	5.5	16	3.0	8	3.9	9	4.3	79
Field trips	1.4	5	3.1	11	0.9	3	0.7	2	1.1	3	4.3	10	1.9	34
Response Pattern														
Reading teachers who have CE students	100.0	377	100.0	386	100.0	367	100.0	325	100.0	292	100.0	256	100.0	2,003
Who marked one or more of the above activities	91.8	346	90.9	351	92.6	340	89.8	292	90.4	264	91.0	233	91.2	1,826
Who marked none of the above activities	8.2	31	9.1	35	7.4	27	10.2	33	9.6	28	9.0	23	8.8	177

* Based on reading teachers who have CE students and who have reported at least one alternative activity for non-participants.
** Multiple responses are allowed.

Compensatory reading activity in these grades appear to have taken place concurrently with regular reading instruction, but they are different from the activities for non-participants. To provide more information on this aspect, the second row of Table 5-3 gives the percentages of teachers who indicated other reading or language arts activities as the only kind of activities that non-CE students are involved in during CE hours. Over all grades, this percentage is 32.2 percent, much smaller than the 87.5 percent obtained by including other kinds of activities.

In addition to other reading activities, math activities, activities related to other subject matter areas, and student-selected activities are also reported as substitutions for compensatory reading activities by a considerable number of teachers. In contrast, few teachers indicated loss of opportunities to take part in physical education activities or field trips due to participation in compensatory activities.

The results for analyses in math are summarized in Table 5-4. The non-respondent rate is appreciably higher than that in reading (21.4 percent vs. 8.8 percent overall). For the 965 math teachers who indicated one or more activities as alternatives for their non-CE students during math CE hours, an average of about two different kinds of activities is mentioned by them. A large percentage (82.4 percent) reported that CE students missed some other math activities in which their non-CE peers normally engaged during CE hours. If we consider just cases where other math activities are indicated as the only kind of activities missed, the percentage drops to 36.7 percent. This shows that combinations of other math activities and some non-math activities are reported by 45.7 percent (82.4 minus 36.7) of the teachers as non-participant engagements when CE students receive their compensatory services. As in reading, physical education activities and field trips are rarely mentioned as being missed by CE students.

Though the data presented in Tables 5-3 and 5-4 suggest that CE students are likely to receive CE services in lieu of at least some portion of the regular instruction, there is no direct evidence for violation of "supplement not supplant" requirements of Title I. Due to a lack of specific information contained in these teacher-level responses, any such inferences based on these data should not be attempted.

Table 5-4

Percent of Math Teachers Who Reported that Non-Participants are Involved in Alternative School Activities While Their CE Students Participate in Compensatory Math Activities

Type of activities in which non-participants are involved **	Grade 1 N=163		Grade 2 N=153		Grade 3 N=176		Grade 4 N=164		Grade 5 N=158		Grade 6 N=151		Total N=965*	
	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count
Other math activities	82.8	135	81.7	125	81.3	143	79.3	130	82.3	130	87.4	132	82.4	795
Other math activities only	37.4	61	32.0	49	30.1	53	38.4	63	37.3	59	45.7	69	36.7	354
Reading or other language arts activities	36.8	60	47.7	73	39.8	70	29.3	48	30.4	48	27.2	41	35.2	340
Activities related to other subject matter areas	25.2	41	33.3	51	35.8	63	39.0	64	40.5	64	41.1	62	35.8	345
Study time	22.7	37	27.5	42	31.3	55	29.3	48	29.7	47	30.5	46	28.5	275
Student selected activities	28.8	47	31.4	48	31.3	55	24.4	40	19.0	30	16.6	25	25.4	245
Visits to the school library	4.9	8	8.5	13	11.4	20	11.0	18	11.4	18	11.3	17	9.7	94
Physical education activities	1.8	3	3.9	6	6.3	11	6.1	10	3.2	5	2.0	3	3.9	38
Field trips	0.6	1	2.6	4	0.6	1	1.2	2	0.6	1	0.0	0	0.9	9
Response Pattern														
Math teachers who have CE students	100.0	216	100.0	202	100.0	218	100.0	214	100.0	195	100.0	183	100.0	1,228
Who marked one or more of the above activities	75.5	163	75.7	153	80.7	176	76.6	164	81.0	158	82.5	151	78.6	965
Who marked none of the above activities	24.5	53	24.3	49	19.3	42	23.4	50	19.0	37	17.5	32	21.4	263

*Based on Math teachers who have CE students and who have reported at least one alternative activity for non-participants.

**Multiple responses are allowed.

CHAPTER 6. CE SERVICES AND FUNDING SOURCES

In Chapter 3 we studied the selection of students to receive compensatory services both at the district and school levels, and provided descriptions of the characteristics of CE selectees. Chapter 4 describes the educational services received by both CE selectees and non-selectees in terms of student-level data on reading/math instructional activities, teacher-level data on instructional practices, and school-level data on tracking and classroom organization. Then the services received by CE selectees are compared with those by non-selectees in CE schools and by students in non-CE schools, in Chapter 5. The present chapter further examines the differences in services received by CE selectees associated with different CE programs.

Although Title I is the largest and the most extensive CE program in the nation, there is a wide variety of other non-Title I CE programs that are funded at the federal, state, and local levels. Compensatory services received by CE selectees often are not supported exclusively by Title I. Instead, non-Title I CE funds are used jointly with Title I funds in many schools to provide compensatory services to their CE selectees. Yet in some other schools, non-Title I CE funds are the sole support of their CE services. The CE programs funded by different sources may differ in degree of formal structure, regulations for student-selection, requirements for the provision of services, and emphases on various kinds of services. Therefore, to further our understanding of the nature of CE programs, receipt of services is compared among different categories of CE selectees who receive services supported by different CE funds. For this purpose, the CE selectees are divided into three groups, separately for reading and math, on the basis of the kinds of funds supporting the services they receive:

- *Title I Selectees in Title I Schools.* Students who are selected to receive Title I/Title I and Other-CE services in schools funded by Title I, singly or in combination with other non-Title I CE funds.
- *Other-CE Selectees in Title I Schools.* Students who are selected to receive only Other-CE services in schools funded jointly by Title I and other non-Title I sources.
- *Other-CE Selectees in Other-CE Schools.* Students who are selected to receive CE services in schools funded only by non-Title I sources.

The differences in the amount of instructional services received are studied first with student-level data. Then school-level information is used to compare instructional programs in schools with different CE funds. Finally, the distributions of services by grade level are described for the three categories of CE selectees.

Comparisons of Receipt of Instructional Services Among CE Selectees

The three categories of CE selectees are compared with respect to the amount of instructional services they receive during the school year. Because the level of educational expenditures may affect the characteristics of services provided to students, school regular and school CE expenditures were used jointly to further divide each category of CE selectees into four sub-categories. In doing so, schools were classified as having 'low regular' expenditures if their yearly regular per-pupil expenditures are below $1,051, or as 'high regular' otherwise.

Simultaneously, schools were classified as having 'low CE' expenditures if their yearly per-participant CE expenditures are below $258, or as 'high CE' otherwise. Thus four groups of CE schools were formed on the basis of their level of expenditures for regular and compensatory education:

- Low Regular/Low CE
- Low Regular/High CE
- High Regular/Low CE
- High Regular/High CE

Differences among the three categories of CE selectees in hours of total reading/math instruction received, as well as the profiles of services received during the 1976-1977 school year are examined for each group of schools. Rather than look at the distribution of total services over the ten specific instructional settings for which data were collected, the service profiles are studied along two major dimensions which describe the type of instructor involved and the size of the instructional group. An illustration of how the new service variables were derived for this purpose may be found in Figure 5-1 of Chapter 5. For reference, complete data on the group means for each of the ten specific services are presented in Tables D-1 and D-2, for reading and math, respectively, of Appendix D.

Comparisons of Reading Instructional Services Received by Differently Funded CE Selectees. Mean hours of total reading services received during the school year by the three categories of reading CE selectees are presented in the first part of Table 6-1, by grade level. Title I selectees typically receive the highest number of hours of reading services, with an exception in grade 3. But, the differences are not large, particularly for grades 2 and 3.

Table 6-2 gives more detailed data for total reading services received by dividing each category of selectees into four subgroups in terms of its school's regular and CE expenditure level. Inspection of the sub-group means reveals certain interactions among CE selection category, school expenditure category, and grade level. A three-way interaction effect was derived from an ANOVA. The nature of the interaction is quite complex. There are no systematic differences among the three groups of CE selectees across the expenditure categories, nor are there any consistent trends for differences among the four expenditure categories for the three types of CE selectees. However, there is a tendency for CE selectees attending High Regular/High CE schools to receive more hours of reading services than their counterparts attending Low Regular/Low CE schools. This finding applies to each of the three categories of CE selectees, and for each grade with two exceptions. The exceptions are found for grades 1 and 2, where Other CE selectees attending Other CE schools in the High Regular/High CE category receive considerably fewer hours of reading services than those in the Low Regular/Low CE category. It may be remarked that the sample sizes for these latter comparisons are small and the between-school variations not related to expenditures and CE selection categories are quite large. The amount of reading services received by Title I selectees and Other CE selectees in Title I schools of the Low Regular/High CE and High Regular/Low CE categories generally tend to be greater than that received by their counterparts in the Low Regular/Low CE category, with some exceptions in grade 6.

Table 6-1

Mean Hours per Year of Reading and Mathematics Services Received by CE Selectees

CE Selection Category	Grade 1	2	3	4	5	6
Reading						
Title I Selectees	302	282	257	244	222	221
Other CE Selectees in Title I Schools	293	280	262	218	211	188
Other CE Selectees in Non-Title I CE Schools	277	271	262	227	213	195
Math						
Title I Selectees	176	182	192	196	203	182
Other CE Selectees in Title I Schools	142	150	171	184	161	156
Other CE Selectees in Non-Title I CE Schools	168	172	199	188	175	170

200

Table 6-2

Mean Hours per Year of Reading and Mathematics Services Received by CE Selectees, by School Expenditure Category

Regular Expenditure Level	CE Selection Category	CE Expenditure Level											
		LOW						HIGH					
	Grade	1	2	3	4	5	6	1	2	3	4	5	6
		Reading											
LOW	Title I CE Selectees	285	238	215	227	184	205	316	299	254	242	228	235
	Other CE Selectees in Title I Schools	230	216	215	182	172	180	262	293	268	213	186	228
	Other CE Selectees in Other CE Schools	283	281	239	231	200	195	227	271	343	215	224	189
HIGH	Title I CE Selectees	308	278	273	242	200	174	290	298	279	256	250	259
	Other CE Selectees in Title I Schools	324	274	267	239	240	167	300	317	276	216	223	207
	Other CE Selectees in Other CE Schools	326	294	225	207	195	169	258	228	254	245	229	223
		Math											
LOW	Title I CE Selectees	164	158	167	168	151	175	194	197	202	224	213	207
	Other CE Selectees in Title I Schools	140	145	152	161	163	146	159	163	185	170	182	172
	Other CE Selectees in Other CE Schools	172	179	175	178	170	151	179	163	266	199	188	185
HIGH	Title I CE Selectees	171	179	165	160	173	142	142	197	201	191	229	184
	Other CE Selectees in Title I Schools	132	139	170	199	150	151	150	189	182	197	169	173
	Other CE Selectees in Other CE Schools	164	171	182	160	156	148	149	168	203	197	179	176

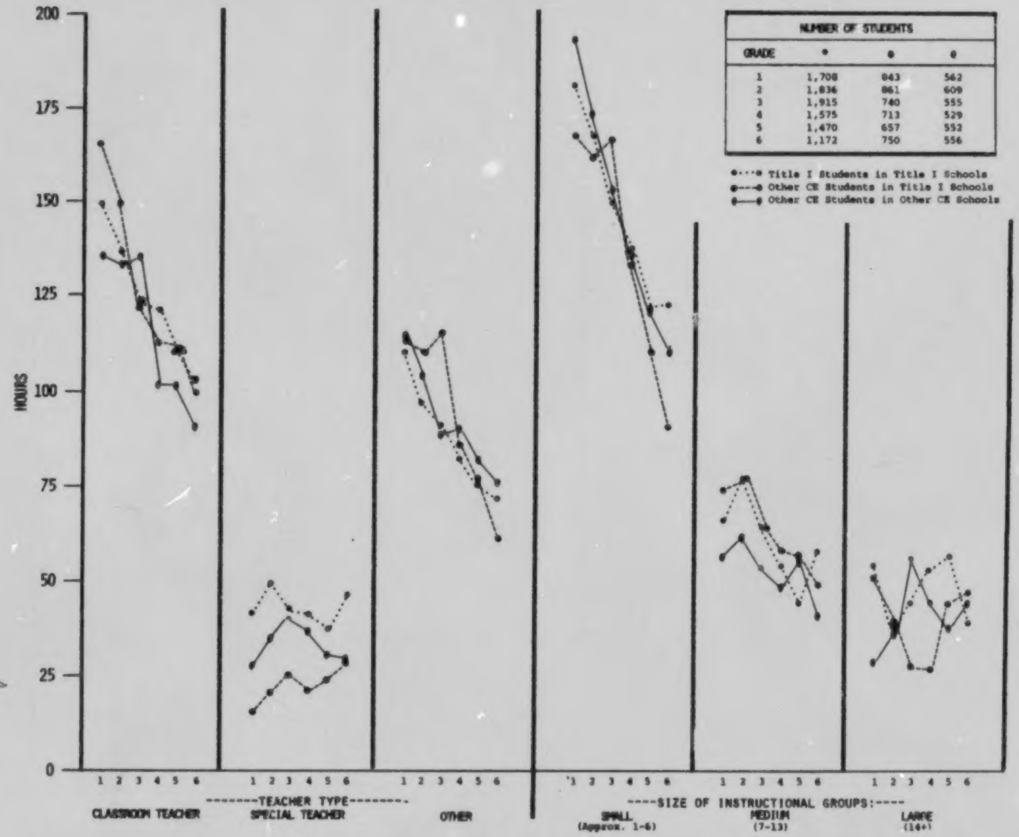
Within the category of Low Regular/Low CE schools, Other-CE selectees in Title I schools have the lowest means across all six grades, and in each instance the mean is at least 10 percent less than the highest mean for that grade. In grades 2 to 5, the averages for Other-CE selectees in Other-CE schools are higher than the respective means for Title I selectees. The direction of differences is reversed for grades 1 and 6, though the magnitude of differences is small. Within each of the remaining three expenditure categories, the highest mean hours are obtained for Title I selectees at the upper three grades, with a single exception at grade 5 in the High Regular/Low CE schools. At the lower three grades, the patterns of differences are inconsistent. The overall picture also suggests that Title I selectees tend to receive greater amounts of reading services than the other two groups of CE selectees if their school's per-participant CE expenditure falls in the high category.

Turning to the receipt of reading services by type of teaching personnel, and by size of instructional group, graphic presentations of the relevant data are given in Figure 6-1 for all CE schools, and in Figures 6-2 to 6-5 for the four groups of CE schools classified in terms of their level of expenditures. These data are derived from those displayed in Table D-1 of Appendix D, by summing the service items as illustrated in Figure 5-1.

Combining CE schools of all expenditure categories, a clear pattern of differences in hours of instruction received from special teachers emerges. As shown in Figure 6-1, Title I selectees consistently have the highest means, while CE selectees in Other-CE schools have the lowest means across the grades. No such pattern exists for differences in hours instructed by classroom teachers, and in hours of assistance by aides/independent work. Broken down by expenditure categories, the picture becomes more complex. The data in Figures 6-2 to 6-5 demonstrate a similar three-way interaction effect found earlier in the case of total reading hours.

Using the marginal means for instruction by special teachers presented in Figure 6-1 as the base line, an almost unreversed tendency is observed. Title I selectees associated with both categories of low-CE-expenditure schools have means below the base line, whereas means for Title I selectees associated with both groups of high-CE-expenditure schools are generally above the base line. However, the deviations from the base line are in most cases small. The data for hours of instruction by classroom teachers indicate a similar tendency. In contrast, means for combined hours of other forms of services, which do not directly involve classroom or special teachers, show a mixed pattern of results.

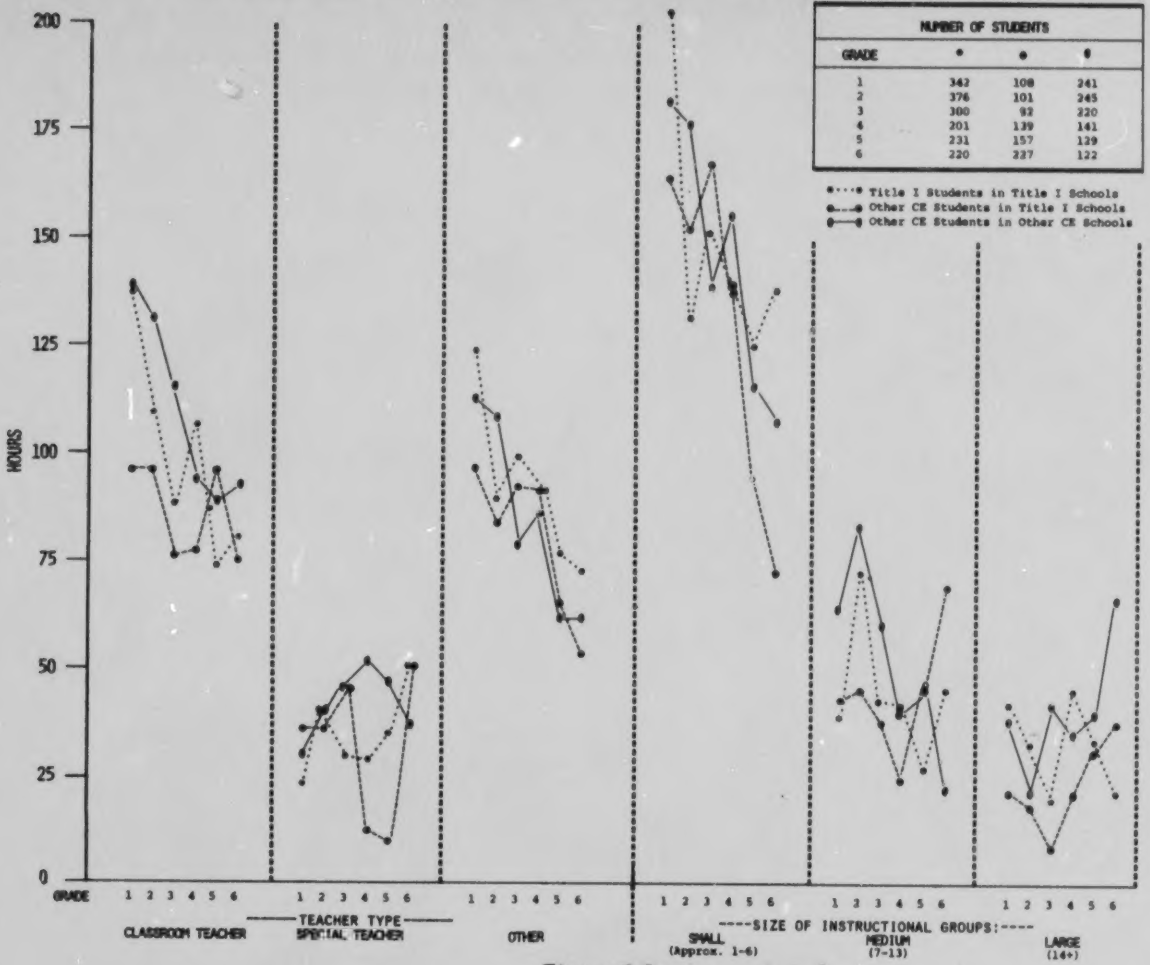
The effect of school expenditure level upon the means for Other CE selectees in Title I schools is somewhat perplexing, particularly if one focuses on hours of instruction by special teachers as a major index of compensatory services. Within the High Regular/High CE schools, Other CE selectees in Title I schools have mean hours with special teachers comparable to or higher than those for Title I selectees in grades 2 to 5, and usually greater than those for their counterparts associated with the other three expenditure categories. For the Low Regular/High CE and the High Regular/Low CE schools, average hours spent with special teachers tend to be quite low for this group of CE selectees, being considerably lower than the corresponding means for the Low Regular/Low CE schools except in grades 4 and 5. In the Low Regular/High CE category, the relatively smaller mean for Other CE selectees



NUMBER OF STUDENTS			
GRADE	●	●	●
1	1,708	843	562
2	1,836	861	609
3	1,915	740	555
4	1,575	713	529
5	1,470	657	552
6	1,172	750	556

Figure 6-1

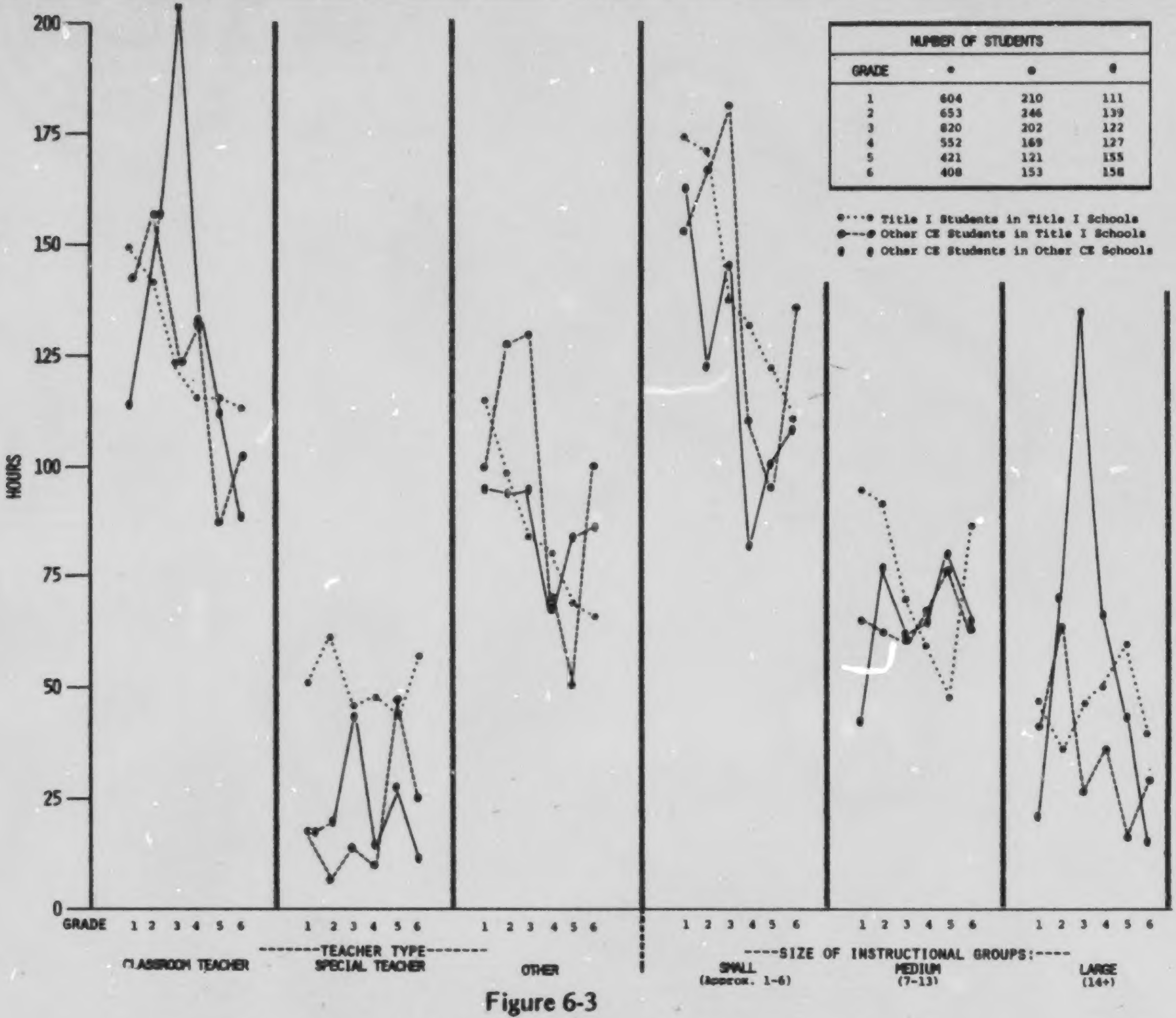
Mean Hours per Year of Reading Instructional Services Received, by Categories of CE Selectees in CE Schools



NUMBER OF STUDENTS			
GRADE	●	●	●
1	342	108	241
2	376	101	245
3	300	92	220
4	201	139	141
5	231	157	129
6	220	227	122

Figure 6-2

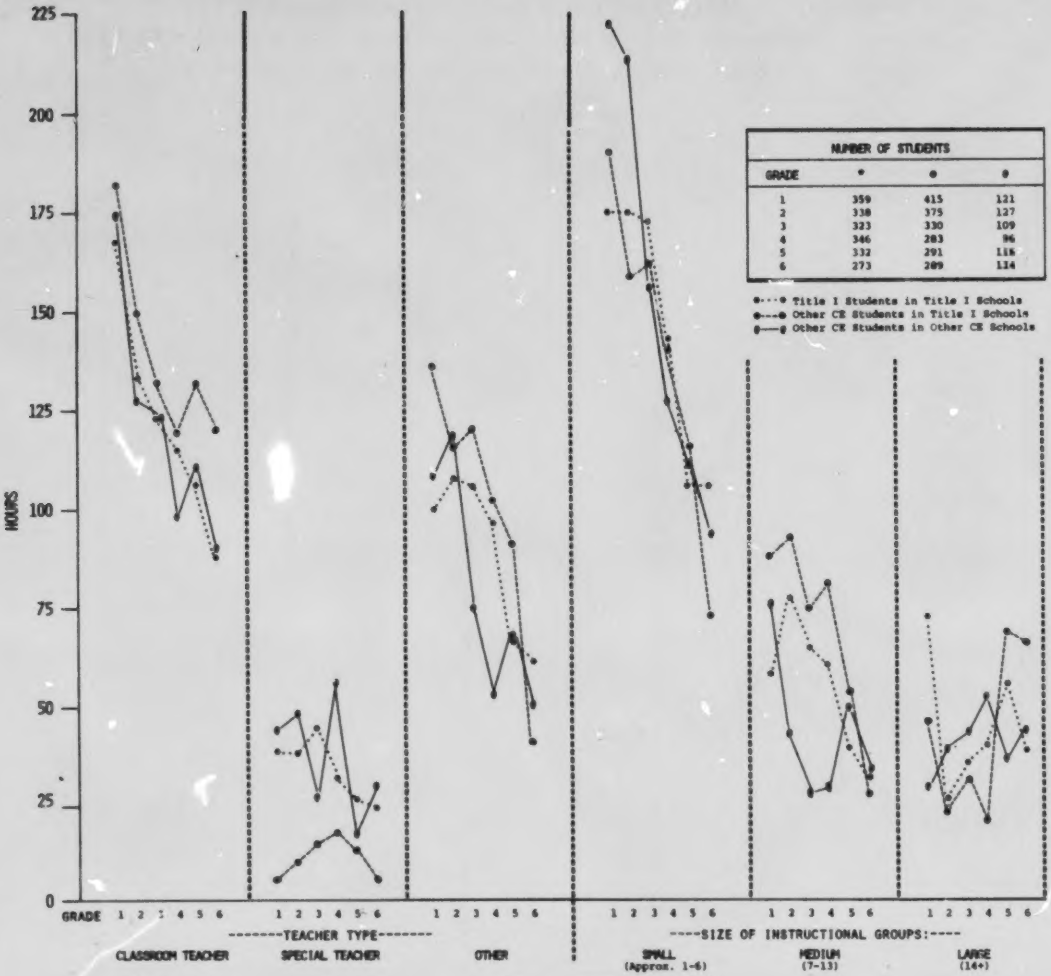
Mean Hours per Year of Reading Instructional Services Received, by Categories of CE Selectees in Schools with Low Regular and Low CE Expenditures



NUMBER OF STUDENTS			
GRADE	●	●	●
1	604	210	111
2	653	246	139
3	820	202	122
4	552	169	127
5	421	121	155
6	408	153	158

Figure 6-3

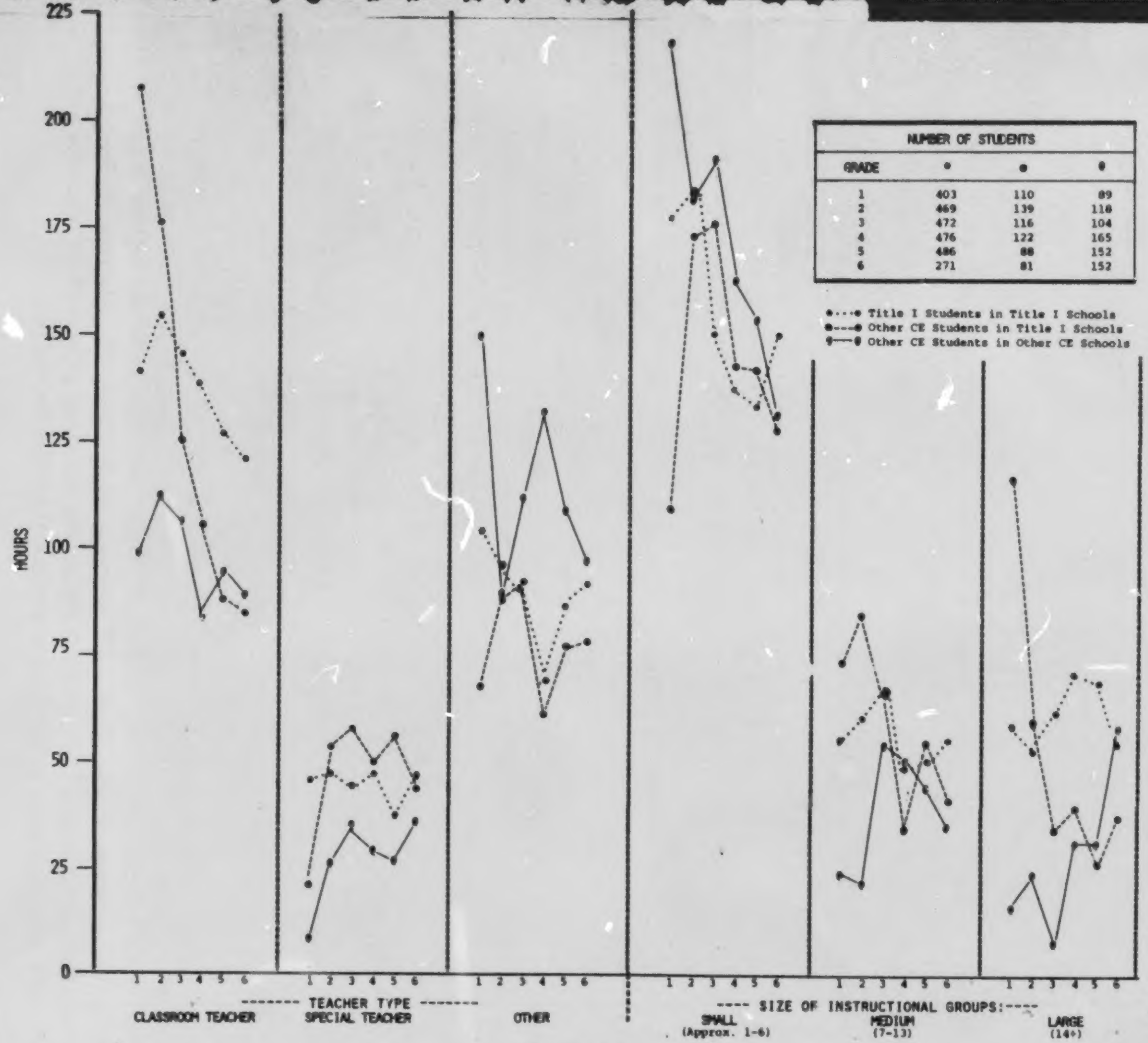
Mean Hours per Year of Reading Instructional Services Received, by Categories of CE Selectees in Schools with Low Regular and High CE Expenditures



NUMBER OF STUDENTS			
GRADE	●	●	●
1	359	415	121
2	338	375	127
3	323	330	109
4	346	283	96
5	332	291	116
6	273	289	114

Figure 6-4

Mean Hours per Year of Reading Instructional Services Received, by Categories of CE Selectees in Schools with High Regular and Low CE Expenditures
]



NUMBER OF STUDENTS			
GRADE	●	●	●
1	403	110	89
2	469	139	118
3	472	116	104
4	476	122	165
5	486	88	152
6	271	81	152

Figure 6-5

Mean Hours per Year of Reading Instructional Services Received, by Categories of CE Selectees in Schools with High Regular and High CE Expenditures in Title I schools is somewhat counterbalanced by a larger mean of hours of assistance by aides (see Table D-1 of Appendix D). Fluctuations in mean hours of instruction by special teachers are quite irregular for Other CE selectees in non-Title I CE schools.

With respect to types of teaching staff, it has been established that receipt of instruction by special teachers is closely associated with selection for compensatory services. By comparison, the relationship between selection for CE and receipt of services along the dimension of size of instructional group is less clear. The data in Tables C-1 and C-3 of Appendix C reveal that CE selectees on the average receive a greater amount of instruction by special teachers in groups of 1-6, in groups of 7 or more students, by paid aides, and in some cases by classroom teachers in groups of 1-6. Three of these four specific instructional settings are included in the category of 'small group' instruction as diagrammed in Figure 5-1, while instruction by special teachers in groups of 7 or more students is put in the 'medium group' category.

With all CE schools combined, it may be seen from Figure 6-1 that the largest proportion of CE selectees' reading hours is spent in small-group instruction. Among the three groups, Other CE selectees in Title I schools usually attend the least hours of small-group instruction, while CE selectees in Other-CE schools typically receive the least hours of medium-group instruction. In most cases, the differences among the three groups are not substantial.

Group means by school expenditure category are graphed in Figures 6-2 to 6-5. The results as shown in these figures are quite inconsistent for the four expenditure categories. No systematic trends exist across expenditure categories. But some discernible patterns may be observed within a given expenditure category. For the Low Regular/Low CE schools, there is a tendency for Other CE selectees in Title I schools to spend fewer reading hours in large-group instruction. They also tend to spend fewer hours in small-group instruction at the upper three grades, compared with the other two groups of CE selectees. Within the Low Regular/High CE category, some trends exist for Title I selectees to have higher means of small- and medium-group instructional hours than Other CE selectees. The data for the Low CE/High Regular schools show very unsystematic results across grades. The results for the High Regular/High CE schools indicate that mean hours of small-group instruction for Other CE selectees in non-Title I CE schools are greater than those for CE selectees in Title I schools for most grades, while they often have the lowest mean hours of medium- and large-group instruction among the CE selectees.

Comparison of Math Instructional Services Received by Differently Funded CE Selectees. Returning to Table 6-1, we find that the overall trend for total hours of math services received is similar to that for reading. In general, Title I selectees show the highest means, followed by CE selectees in non-Title I CE schools, while Other CE selectees in Title I schools have the lowest means. The distinctions among the three groups of CE selectees in receipt of math services appear to be more systematic than that for reading.

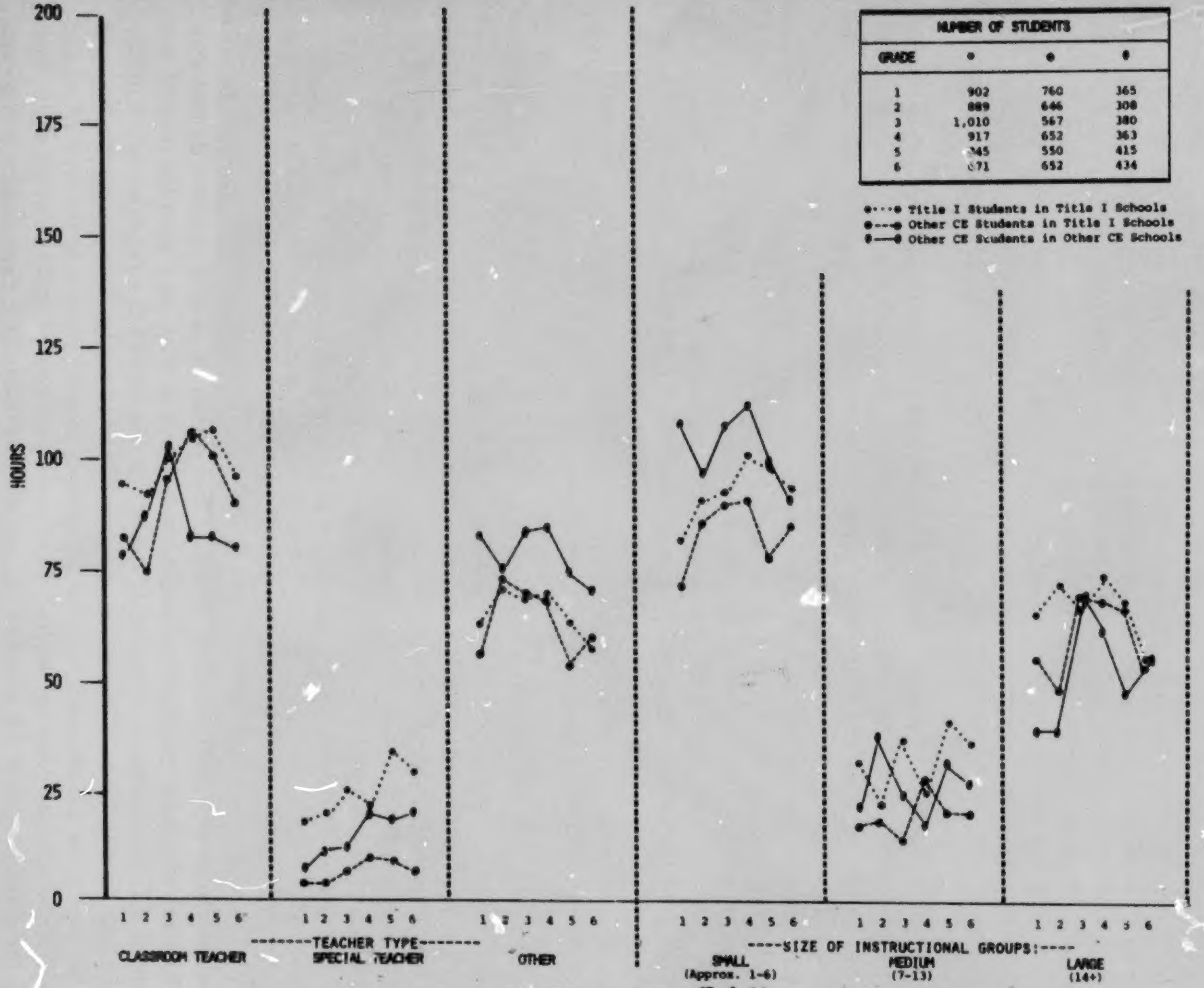
Examining the group means by expenditure category presented in Table 6-2, we find that the results for the Low Regular/High CE schools resembly closely the overall trend. The data for the other three expenditure categories indicate different trends. Within the Low Regular/Low CE category, Other CE selectees in Title I schools typically receive the least hours of math services, as in the case of reading. The only exception is found in grade 5. For the High Regular/Low CE and the High Regular/High CE schools, the differences among the three groups of CE selectees are quite inconsistent across the grades.

When comparisons are made within a given group of CE selectees, the differences among the four expenditure categories in total hours of math services received are more systematic than those found for reading. These comparisons reveal that with a few exceptions CE selectees attending Low Regular/High CE schools on the average receive more hours of math services than do their counterparts in the other three expenditure categories. Greater differences are observed between the CE expenditure categories than between the two regular expenditure categories. To summarize, the data show a significant three-way interaction among school expenditure category, CE selection category, and grade level—as in reading.

Again, the differences in receipt of math services among CE selectees are further examined in terms of type of instructor and size of instructional groups. Average hours per year of math instruction received from different types of instructors are graphed in Figure 6-6, based on data for all CE schools. As in reading, it may be seen that Title I selectees consistently have the highest means for instruction by special teachers, while Other CE selectees in Title I schools always show the lowest means. The differences are quite substantial. With respect to instruction by classroom teachers, the results are less consistent, although Title I selectees also tend to have the highest means. Where services are received in a form other than direct instruction by classroom or special teachers, the highest mean hours are found for Other CE selectees in non-Title I CE schools, at all grade levels. Referring to Table D-2 of Appendix D, it may be observed that the finding primarily reflects a trend for this group to spend more hours in independent work with non-programmed materials.

Figures 6-7 to 6-10 further examine the effects of school expenditure levels on the differences in receipt of math services among differently funded CE selectees. The findings for math are similar to those for reading. For the schools with low per-participant CE expenditures, (see Figures 6-7 and 6-9), mean hours of instruction by special teachers are higher, particularly in grades 4-6, for CE selectees in Other-CE schools than for the selectees in Title I schools. This tendency is different for the two High-CE expenditure categories (see Figures 6-8 and 6-10) where Title I selectees tend to receive the most hours of such instruction. The latter differences favoring Title I selectees are especially pronounced for the Low Regular/High CE schools.

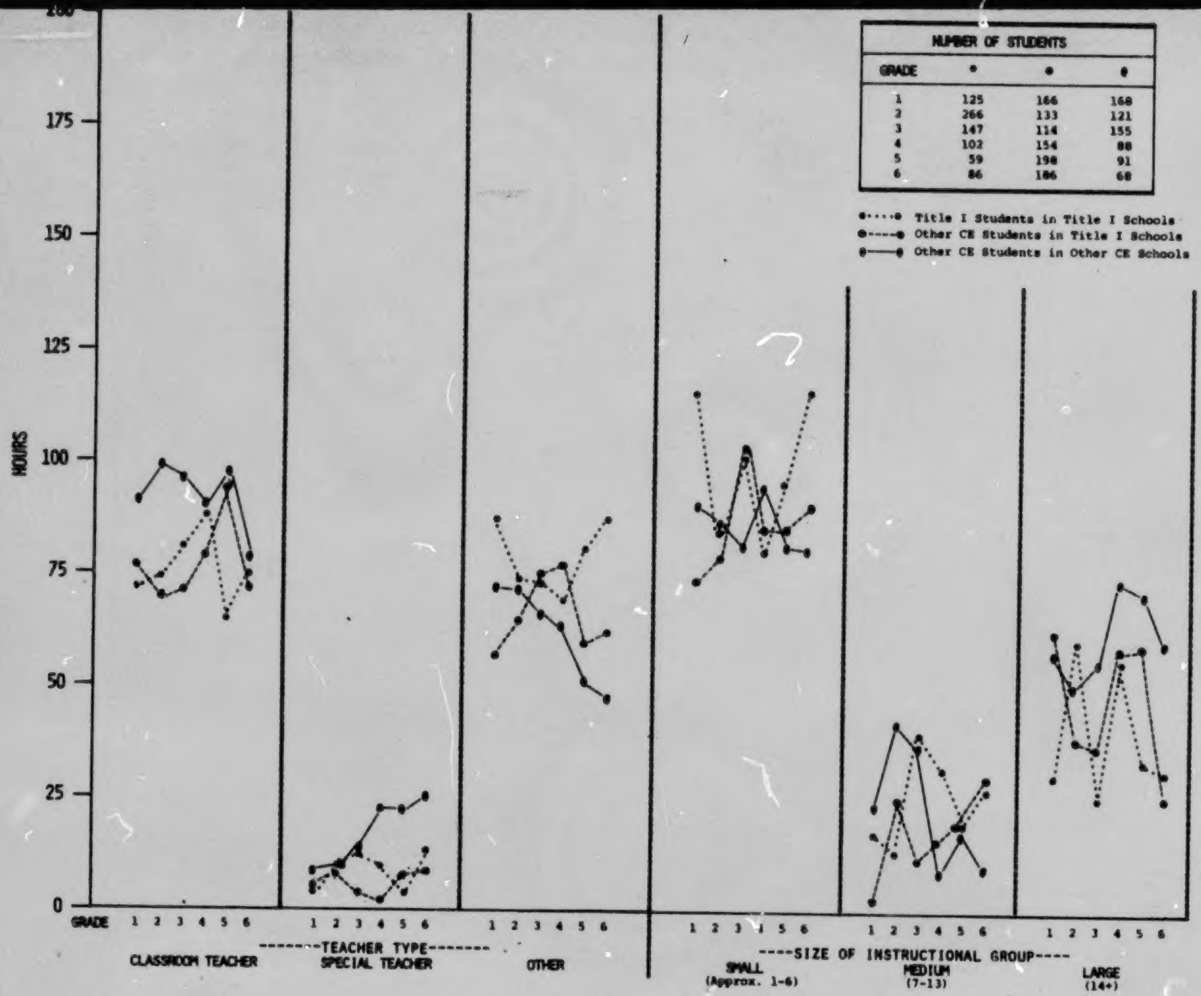
Within the group of Title I selectees, hours of instruction by special teachers do not vary with the level of regular per-pupil expenditures as much as they vary with the level of per-participant CE expenditures. The mean hours for the High-CE categories substantially exceed those for the Low-CE categories, consistent for all grades. In contrast, the hours of such instruction for CE selectees in Other CE schools tend to increase as the level of regular per-pupil expenditures becomes higher. Further inspections of the extent of differences among the three groups of CE selectees suggest that the level of CE expenditures has greater effects on the amount of special-teacher instruction received than does the level of regular expenditures.



GRADE	●	●	●
1	902	760	365
2	889	646	308
3	1,010	567	380
4	917	652	363
5	945	550	415
6	871	652	434

Figure 6-6

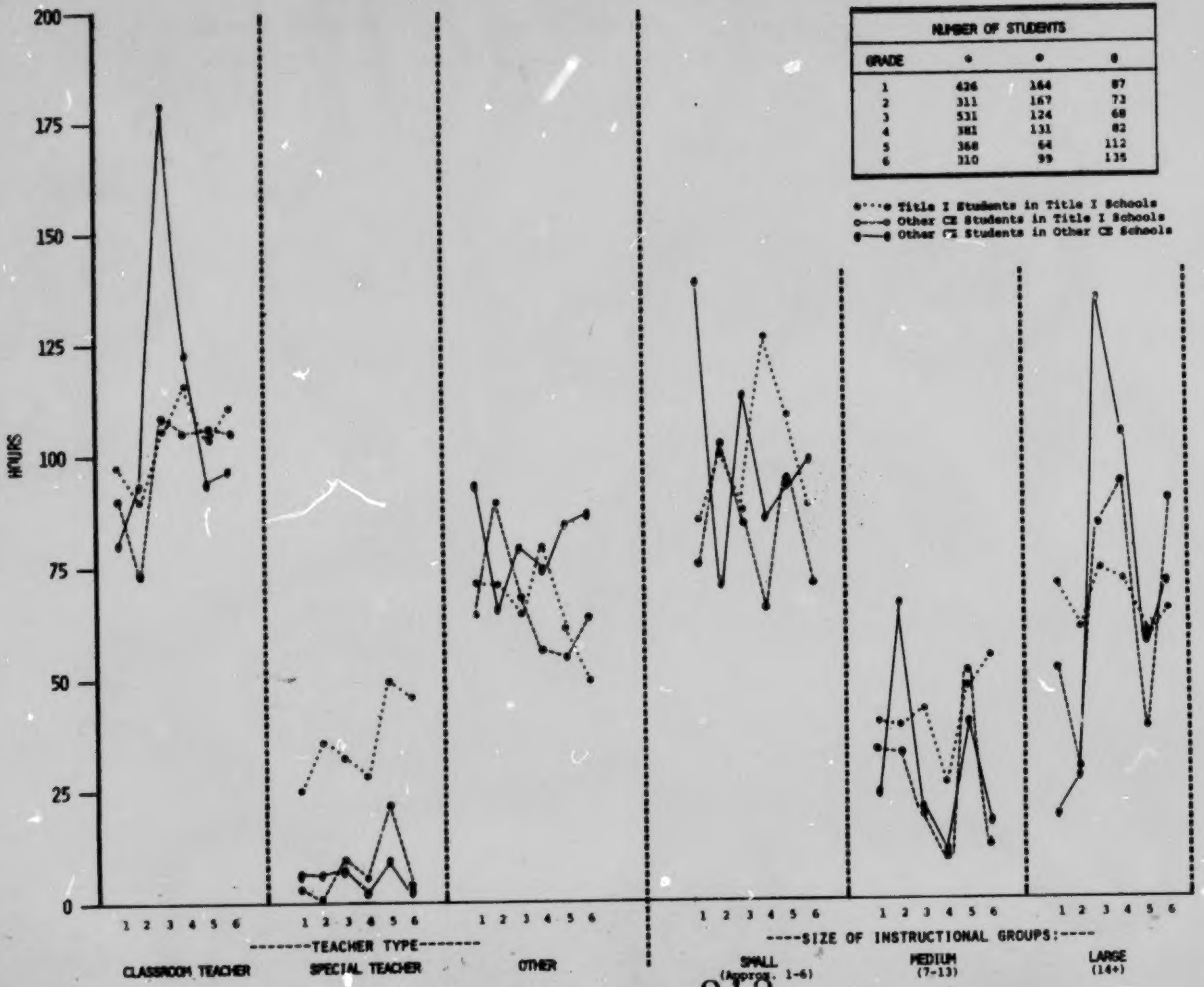
Mean Hours per Year of Mathematics Instructional Services Received, by Categories of CE Selectees in CE Schools



NUMBER OF STUDENTS			
GRADE	●	●	●
1	125	166	168
2	266	133	121
3	147	114	155
4	102	154	88
5	59	198	91
6	86	186	68

Figure 6-7

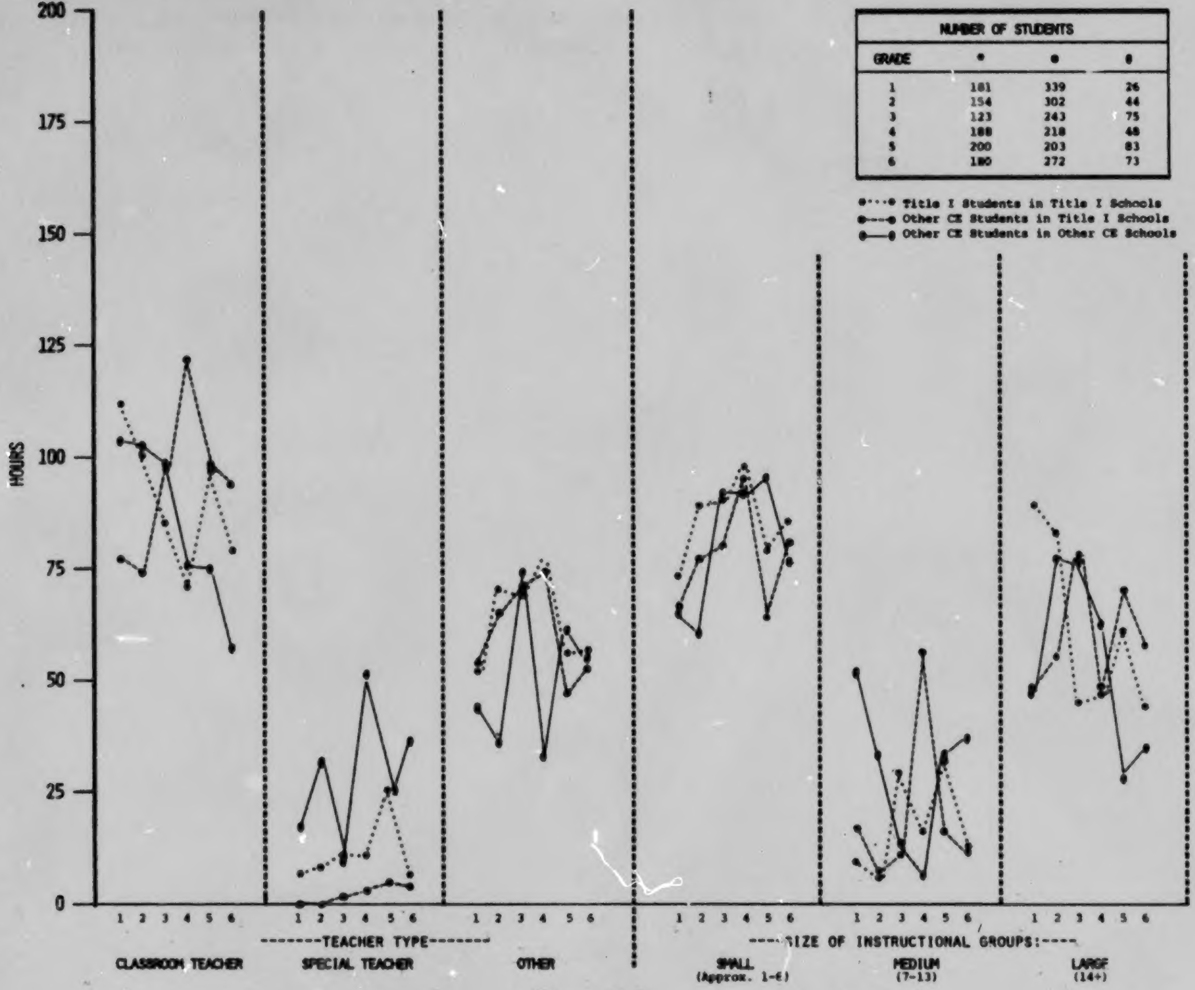
Mean Hours per Year of Mathematics Instructional Services Received, by Categories of CE Selectees in Schools with Low Regular and Low CE Expenditures



NUMBER OF STUDENTS			
GRADE	●	●	●
1	426	164	87
2	311	167	73
3	531	124	68
4	381	131	82
5	368	64	112
6	310	99	135

Figure 6-8

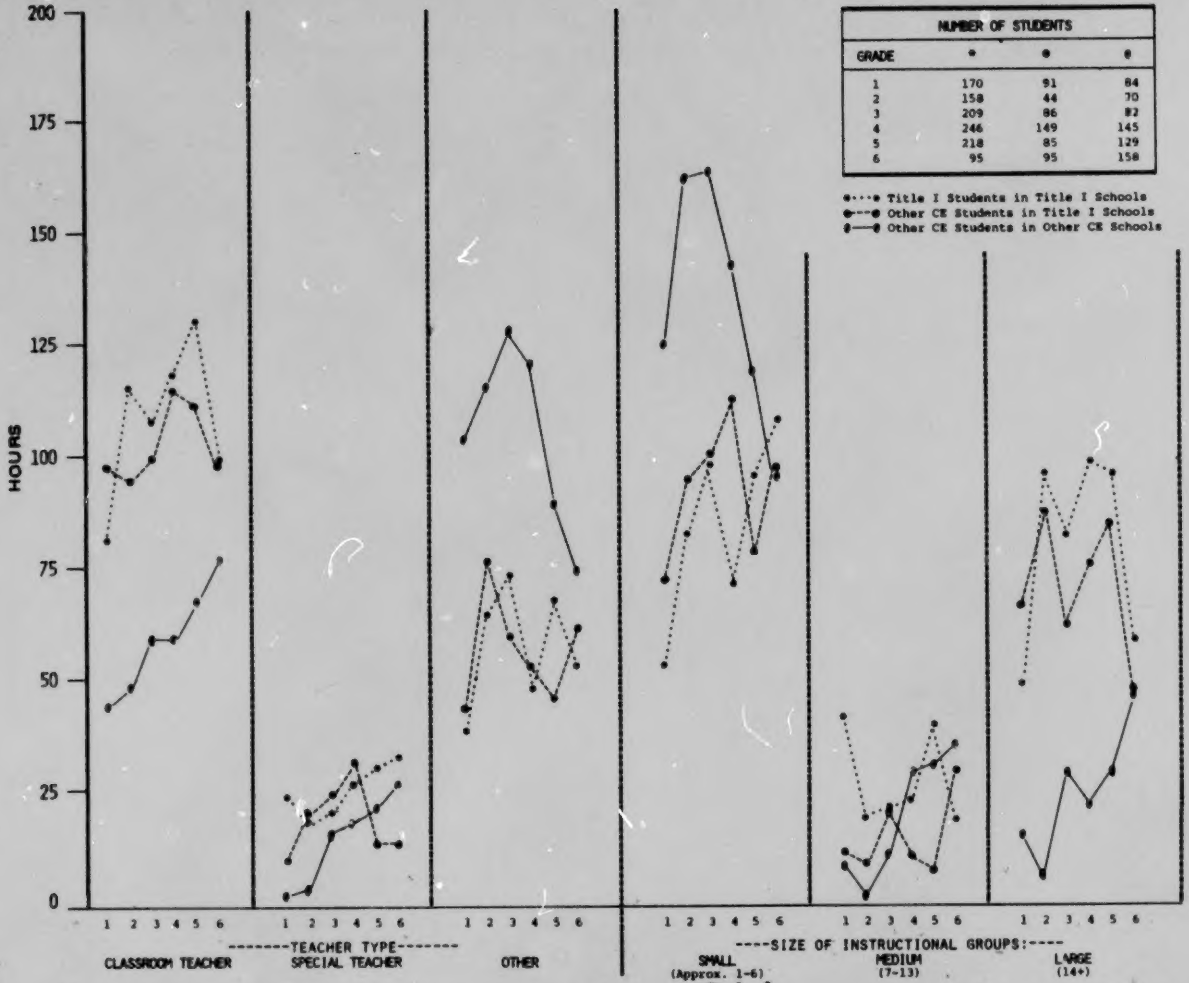
Mean Hours per Year of Mathematics Instructional Services Received, by Categories of CE Selectees in Schools with Low Regular and High CE Expenditures



NUMBER OF STUDENTS			
GRADE	•	●	●
1	181	339	26
2	154	302	44
3	123	243	75
4	188	218	48
5	200	203	83
6	180	272	73

Figure 6-9

Mean Hours per Year of Mathematics Instructional Services Received, by Categories of CE Selectees in Schools with High Regular and Low CE Expenditures



GRADE	●	●	●
NUMBER OF STUDENTS			
1	170	91	84
2	158	44	70
3	209	86	82
4	246	149	145
5	218	85	129
6	95	95	158

Figure 6-10

Mean Hours per Year of Mathematics Instructional Services Received, by Categories of CE Selectees in Schools with High Regular and High CE Expenditures

The comparisons of hours of instruction by classroom teachers show a less clear picture. Some trends are found for the Low Regular/Low CE schools where CE selectees in Other-CE schools typically receive more hours than do the other two groups, and for the High Regular/High CE schools where Title I selectees tend to receive the most hours. For the other two expenditure categories, the results are inconsistent across grades.

Regarding the amount of math services received in the forms of assistance by aides and independent seat work, the differences among the three groups of CE selectees are mostly not large and the patterns are inconsistent. Only within the High Regular/High CE category do the means for one group clearly exceed those for the other two groups. In this category, CE selectees in Other CE schools have the highest mean hours for this kind of math service in all grades, and the differences are unusually large in grades 1-4. The difference between the highest and the lowest means ranges from 28.4 to 63.1 percent, with the highest as the base.

Finally, we examine the differences among CE selectees in receipt of math services by size of instructional group. Referring back to Figure 6-6, average hours of math services by size of instructional group are graphed there for all CE schools combined. As in reading the largest proportion of math hours is spent in small-group instruction by all three groups of CE selectees. For this type of instruction, CE selectees in Other-CE schools usually have the highest means, while Other-CE selectees in Title I schools have the lowest. On the other hand, Title I selectees tend to spend more hours in medium-group instruction than Other CE selectees, with a notable exception in grade 2. Additionally, Title I selectees also receive more hours of instruction in large groups than do the other two groups, except in grade 3 and 6 where practically no differences are found among the three groups.

As may be seen from Figures 6-7 to 6-10, the patterns of results across the four expenditure categories are complex. Looking at Figure 6-10, we find, for the High Regular/High CE schools, that CE selectees in Other-CE schools generally receive the most hours of small-group instruction among the three groups. The amount of extra hours they receive is very large in grades 1-5. Title I selectees, on the other hand, typically have greater means for medium- and large-group instructional hours than other selectees, although a few exceptions are observed.

The situation for the Low Regular/Low CE schools are somewhat different. There Title I selectees on the average receive more hours of small-group instruction in four of the six grades (grades 1, 3, [illegible], and 6), and also more of medium-group instruction in grades 3-6 than the other two groups of selectees. A less consistent pattern across grades is found for the large-group instruction.

Unlike the case of special-teacher instruction, the comparisons of hours of small-group instruction within the Low Regular/High CE schools reveal no clear picture. Neither are there consistent trends for the differences in medium- and large-group instruction for this expenditure category. Similarly, there are no clear patterns of differences observable for the High Regular/Low CE schools.

In summary, Title I selectees in general have some advantage of receiving more hours of reading and math services than Other-CE selectees. The advantage is shown most clearly in receipt of instruction by special teachers. Title I selectees consistently receive the highest mean hours of such instruction, while Other-CE selectees in Title I schools have the lowest. This finding holds true for both reading and math. Overall, there is an interaction effect among school level of regular and CE expenditures, CE selection category, and grade level, on the receipt of various instructional services.

Delivery of Instructional Services and School's Receipt of CE Funds

This section examines the differences in instructional services provided to their students by schools with different types of CE funds. In accordance with the types of CE funds available, the schools are divided into three categories:

- *Title I schools* that receive only Title I funds or both Title I and some Other CE funds
- *Other CE schools* that receive some kinds of CE funds but not Title I
- *Non-CE schools* that receive no CE funds

Where useful, schools in each of these categories are further sub-divided into small and large schools in terms of their student enrollment in grades 1-6. The grade 1-6 enrollment for small schools ranges from 14 to 316 students, while that for large schools ranges from 317 to 1,216 students.

Per-Participant CE Expenditures by Service Areas. Since the characteristics of services offered by a school may be related to the amount of funds allocated to specific service areas, it is appropriate to first summarize the per-participant CE expenditures that support various compensatory services. Table 6-3 presents the descriptive statistics for the distribution of these expenditures in Title I schools and in Other CE schools. Compensatory expenditures in four areas are described: reading services, math services, community activities, and other costs. Included in the expenditures for reading and math services are those spent for the salaries of teachers and supplementary teaching personnel, staff training, administrative services, planning/evaluation, instructional supplies, building/equipment, and other expenditures associated with the services. Expenditures for community activities are those spent for Advisory Council and Parent/Teacher Associations, etc. 'Other costs' include any expenditures that have not been covered in the above three areas.

The per-participant expenditures for a specific service area were computed by apportioning the combined expenditures from all applicable CE funding sources to the students reported as receiving services supported by one or more kinds of these funds. The funding sources may include Title I, district, state and other federal sources, depending on their availabilities to the school. To obtain the averages given in Table 6-3, schools that reported no expenditures for a particular service area were excluded from the calculations in that area. Schools with per-participant CE expenditures exceeding $1,000 were also not used because such a level of expenditure is unusually high, and thus the validity of the data was in doubt.

As may be seen from Table 6-3, the means of per-participant CE expenditures in reading and math for Title I schools are higher than those for Other CE schools. The difference between Title I and Other CE schools is small in reading, while the difference is considerably larger in math ($8 vs. $112). The number of schools indicating expenditures for math is only about half that for reading in both Title I and Other CE schools, while the number of schools indicating expenditures for community activities is only about one-fourth of that for reading. Both Title I and Other CE schools tend to have higher per-participant CE expenditures for reading than for math services. The average difference between reading and math per-participant expenditures is substantial ($125) in Other CE schools, but small ($21) in Title I schools. There is a tendency for Other CE schools to direct more intense efforts to reading compensatory services than to math.

By comparison, the per-participant allocations of CE funds to community activities and other costs are small for both types of CE schools. In making all these comparisons, one should take into consideration the large coefficeints of variation for the distributions of these expenditures. In view of the skewness of these distributions, the medians are also presented in the table. Study of the summary statistics contained there disclosed considerable overlapping between the expenditure distributions for Title I schools and for Other CE schools in all four service areas.

Reading and Math Instructional Services. Table 6-4 compares the instructional services offered by the three types of schools categorized according to their receipt of CE funds. The average total reading and math instructional hours offered per year do not differ significantly among the three categories of school, although there is a slight tendency for Title I schools to offer the most hours of instruction. Teachers in Title I schools typically reported the greatest length of special reading and math instruction for students, while those in non-CE schools reported the least. For both total hours of instruction and weeks of special instruction, reading services far exceed those for math regardless of the CE receipt category.

For the following analyses, schools were categorized into six groups based on their CE receipt category (Title I, Other CE, and Non-CE) and their enrollment in grades 1-6 (small, large). School enrollment was used in the categorization because it may affect the characteristics of the service aspects to be described.

Reading and Math Class Size. Some schools may have small classes simply by necessity. That is, if combined-grade classes are not used, their class size will be limited by the number of students in a grade. For the analyses here, we have therefore divided the schools into small and large to partially control for this effect. The readers are referred to the beginning of this section for a description of the division of schools by enrollment. The data in Table 6-5 reveal that smaller schools do indeed tend to have smaller classes. For both small and large schools, Title I schools, on the average, have the smallest reading classes, while the non-CE schools typically have the largest classes among the three types of schools. This result lends support to the assertion that Title I funds are used to reduce class sizes. The differences in class size for math are comparatively small, though CE schools tend to have slightly smaller classes than do non-CE schools. It may also be observed that math classes are generally larger than reading classes.

Table 6-3

Per-Participant CE Expenditures, by School Receipt of CE Funds

Compensatory Service Area		School's Receipt of CE Funds: Title I/Title I Plus Other CE	School's Receipt of CE Funds: Other CE Only
Reading Services	mean	$336	$328
	median	$285	$263
	SD	$209	$241
	N*	147	28
Math Services	mean	$315	$203
	median	$289	$144
	SD	$208	$214
	N*	75	14
Community Activities	mean	$ 19	$ 22
	median	$ 4	$ 14
	SD	$ 37	$ 30
	N*	37	7
Other Costs	mean	$ 44	$ 24
	median	$ 27	$ 13
	SD	$ 63	$ 22
	N*	34	6

*Schools with unusually high per-participant CE expenditures, those exceeding $1,000, were eliminated from the computations as the means and standard deviations are extremely sensitive to such outlier values. Schools with no expenditures for a given area of CE services were also excluded from the tabulation.

Table 6-4

Amount of Reading and Math Instructional Services Offered per Year by School Receipt of CE Funds*

Amount of Instructional Services	School CE Receipt Category								
	Title I Schools			Other CE Schools			Non-CE Schools		
	N	Mean	S.D	N	Mean	S.D.	N	Mean	S.D.
Hours per year of reading offered	157	246.76	54.02	56	239.36	51.96	29	225.41	52.98
Hours per year of math offered	157	178.38	25.94	56	171.41	20.62	29	168.61	29.30
Weeks per year of special reading instruction	156**	25.30	8.93	56	20.88	10.83	29	6.47	8.98
Weeks per year of special math instruction	157	11.58	11.19	56	9.58	8.18	29	2.26	5.00

*Hours per year of reading and math instruction offered were based on student-level data, aggregated to school level. Weeks per year of special reading and math instruction were based on teacher-level data, again aggregated to school level. The number of weeks reflects the length of time students receive services from special teachers, if referred to them.

**One Title I school did not return any reading Teacher Questionnaires.

Table 6-5

Reading and Math Class Sizes by School CE Receipt Category and Enrollment Size

Subject of Class		School CE Receipt Category						Total
		Title I Schools		Other CE Schools		Non-CE Schools		
		Small (N=82)	Large (N=75)	Small (N=19)	Large (N=37)	Small (N=21)	Large (N=8)	(N=242)
Reading*	Mean	15.55	18.37	17.15	20.55	19.15	21.61	17.83
	S.D.	5.31	3.67	4.55	3.60	5.01	4.17	4.83
Math	Mean	20.15	23.50	20.08	24.23	22.25	25.09	22.15
	S.D.	5.48	3.38	6.10	2.84	4.59	3.92	4.80

*One large Title I school did not return any reading Teacher Questionnaires.

Practices for Organizing Classes. Table 6-6 presents the percentages of schools that use each of the five listed practices extensively to place students in classes. In obtaining the tabulations, only principals' responses that were verified by the response of one or more teachers in their school are included. The data show that the most frequent practice is to mix students of different ability levels in classes. There is no pronounced tendency for one type of school to use this method more often than another school, particularly in view of the considerable differences in sample sizes. The percentages of schools using the other four methods are generally much smaller.

Student Assignment to Reading and Math Instruction. Table 6-7 presents the average percentages of teachers who indicated that students were assigned to them for reading or math instruction on an educational basis, i.e., achievement test scores or teacher's judgment. There is some tendency for smaller schools to use these bases less often than larger schools. It is likely that small schools simply assign all students to one teacher or have less need for systematic procedures to make assignments. For the small schools, the extent of using achievement test scores or teacher's judgment in student assignment is greater in the CE schools than in the non-CE schools. The number of large non-CE schools is too small to afford reasonable comparisons with the CE schools.

Student Placement for Regular Instruction. The data in Table 6-8 show that the majority of schools place their students in classes for regular instruction on the basis of educational—as opposed to arbitrary—criteria or by and teacher's judgment. Arbitrary criteria refer to alphabetical, intact-class, or random assignment. Parental or student requests are rarely used as placement criteria. Arbitrary criteria are adopted occasionally, but mostly by small schools. There are no substantial differences among the Title I, Other CE and non-CE schools.

Selection of Students for Sub-Group Instruction. Table 6-9 presents the percentages of teachers who select students for instructional sub-groups in various ways. Similar data for math are shown in Table 6-10. The three most frequently used methods in all six groups of schools are those based on prior or current achievement and on the extent to which a student has mastered a specific set of objectives. This finding applies to both reading and math. The differences among the six groups of schools are modest with the exception that a considerably smaller percentage of teachers in small non-CE schools reported using mastery of specific objectives to form sub-groups for reading instruction. The data in these two tables also reveal that sub-groups are formed for math instruction less often than for reading.

Types of Sub-Groups for Instruction. Tables 6-11 and 6-12 present the average percentages of teachers who form various kinds of instructional sub-groups for reading and for math, respectively. Teachers are most likely to create sub-groups that include students in a single grade, with either similar or different achievement levels. Sub-groups consisting of students from different grades but with similar achievement levels are also used somewhat often by teachers, particularly for reading, and particularly in small CE schools. That teachers in small schools create this type of sub-group more often than teachers in large schools may be explained, to some extent, by the smaller number of students in a grade which makes the use of combined-grade classes likely. On the whole, there are no substantial differences among the three CE receipt categories of schools in the types of instructional sub-groups created.

Table 6-6

Percentage of Schools Employing Different Class Organization Practices by School CE Receipt Category and Enrollment Size

Class Organization Practices*		School's CE Receipt Category					
		Title I Schools		Other CE Schools		Non-CE Schools	
		Small (N=82)	Large (N=75)	Small (N=19)	Large (N=37)	Small (N=21)	Large (N=8)
Mixing ability levels	%	83	91	95	89	71	100
	N**	82	75	19	37	21	8
Based on ability	%	25	30	42	43	33	63
	N**	81	74	19	37	21	8
Using ungraded classes	%	10	13	11	14	11	25
	N**	80	75	19	36	19	8
Flexible scheduling	%	25	31	11	32	5	38
	N**	81	75	19	37	20	8
Mixed grades within classes	%	27	28	21	28	35	50
	N**	81	74	19	36	20	8

*Multiple responses were allowed.

**If a principal's response was not validated by at least one teacher in his school, the school was considered as having missing data.

Table 6-7

Percentages of Teachers Who Assign Students to Reading and Math Instruction on an Educational Basis, by School CE Receipt, and Enrollment Size

Student Assignment		School's CE Receipt Category					
		Title I Schools		Other CE Schools		Non-CE Schools	
		Small	Large	Small	Large	Small	Large
Student assignment for reading	Mean	60.51	62.04	51.58	67.35	43.23	72.09
	S.D.	27.90	23.16	25.68	24.25	36.52	12.50
	N	82	74*	19	37	21	8
Student assignment for math	Mean	46.63	50.06	49.06	56.97	34.07	56.09
	S.D.	27.07	24.25	30.88	26.10	34.94	16.33
	N	82	75	19	37	21	8

*One school did not return any reading Teacher Questionnaire.

Table 6-8

Placement of Students in Regular Instructional Classes by School CE Receipt Category and Enrollment Size

Placement Criteria		School CE Receipt Category					
		Title I Schools		Other CE Schools		Non-CE Schools	
		Small (N=82)	Large (N=75)	Small (N=19)	Large (N=37)	Small (N=21)	Large (N=8)
Educational	percent	70.7	88.0	68.4	91.9	81.0	100.0
	count	58	66	13	34	17	8
Arbitrary	percent	29.3	12.0	26.3	5.4	19.0	0.0
	count	24	9	5	2	4	0
Request	percent	0.0	0.0	5.3	2.7	0.0	0.0
	count	0	0	1	1	0	0

Table 6-9

Percentages of Teachers Using Different Methods to Select Students for Reading Sub-Groups, by School CE Receipt Category and Enrollment Size

Reading Sub-Group Selection Method		School's CE Receipt Category					
		Title I Schools		Other CE Schools		Non-CE Schools	
		Small (N=82)	Large (N=74)*	Small (N=19)	Large (N=37)	Small (N=21)	Large (N=8)
Achievment in prior grade	Mean	13.87	12.37	15.10	17.50	19.23	11.63
	S.D.	16.95	12.24	18.19	19.01	25.99	9.78
General aptitude tests	Mean	2.62	1.88	0.00	2.49	1.28	2.33
	S.D.	5.59	3.43	0.00	5.07	4.04	2.59
Student reading achievement	Mean	39.15	43.89	36.00	41.16	46.01	40.97
	S.D.	23.20	19.25	20.52	21.67	31.99	19.65
Characteristics unrelated to reading	Mean	0.22	0.36	0.00	0.99	0.00	1.19
	S.D.	1.38	1.37	0.00	4.28	0.00	3.37
Student self-selection	Mean	0.49	0.32	0.88	0.94	2.18	0.00
	S.D.	3.74	1.23	3.82	2.25	7.64	0.00
Mastery of specific reading objectives	Mean	25.61	26.00	29.35	20.92	8.63	26.29
	S.D.	20.91	16.21	17.49	16.28	13.18	10.09
Does not form sub-groups	Mean	18.05	15.19	18.67	16.01	22.68	17.60
	S.D.	19.14	15.26	22.82	17.21	25.95	14.73

*One school did not return any reading Teacher Questionnaires.

Table 6-10

Percentages of Teachers Using Different Methods to Select Students for Math Sub-Groups, by School CE Receipt Category and Enrollment Size

		School CE Receipt Category					
		Title I Schools		Other CE Schools		Non-CE Schools	
Math Sub-Group Selection Method		Small (N=82)	Large (N=75)	Small (N=19)	Large (N=37)	Small (N=21)	Large (N=8)
Achievement in prior grade	Mean	2.74	4.77	3.89	5.38	5.95	1.90
	S.D.	10.17	9.17	9.92	11.54	11.53	2.72
General aptitude tests	Mean	1.20	0.74	0.00	0.43	0.60	0.50
	S.D.	5.12	2.23	0.00	1.47	2.73	1.41
Student math achievement	Mean	27.46	29.91	20.84	30.50	21.25	32.65
	S.D.	22.78	16.64	20.71	18.26	17.76	13.62
Characteristics unrelated to math	Mean	0.61	0.09	0.00	0.00	0.00	0.70
	S.D.	2.78	0.77	0.00	0.00	0.00	1.97
Student self-selection	Mean	0.27	0.23	0.00	0.00	0.68	0.00
	S.D.	2.45	1.41	0.00	0.00	3.12	0.00
Mastery of specific math objectives	Mean	19.04	32.30	28.82	27.60	17.07	39.08
	S.D.	18.15	22.17	22.47	16.83	14.77	15.45
Does not form sub-groups	Mean	48.67	31.95	46.44	36.09	54.45	25.17
	S.D.	27.21	24.11	22.63	24.03	28.08	16.71

Table 6-11

Types of Reading Sub-Groups by School CE Receipt Category and Enrollment Size (Percentage of Teachers Creating the Type of Sub-Groups)

		School's CE Receipt Category					
		Title I Schools		Other CE Schools		Non-CE Schools	
Types of Reading Sub-Groups		Small (N=82)	Large (N=74)*	Small (N=19)	Large (N=37)	Small (N=21)	Large (N=8)
Single grade, same reading level	Mean	34.55	41.63	34.40	38.76	33.71	34.00
	S.D.	22.50	16.74	25.96	16.45	27.14	23.89
Single grade, different reading level	Mean	22.33	29.45	24.56	33.17	27.67	28.14
	S.D.	20.33	15.87	23.11	17.31	24.44	21.18
Different grades, same reading level	Mean	18.75	7.89	17.97	9.78	14.06	5.04
	S.D.	23.56	13.18	18.50	19.09	21.60	5.27
Different grades, different reading level	Mean	1.79	1.45	2.72	1.26	2.08	3.80
	S.D.	4.92	3.26	5.73	3.11	6.04	7.41
Ungraded class, same reading level	Mean	2.84	1.78	0.38	0.73	0.00	8.81
	S.D.	10.12	6.76	1.64	3.62	0.00	15.01
Ungraded class, different reading level	Mean	2.04	2.07	0.88	0.30	1.98	6.44
	S.D.	9.52	6.41	3.82	1.27	5.04	13.83
Does not form sub-groups**	Mean	17.69	15.73	19.11	16.01	20.49	13.78
	S.D.	19.82	15.95	22.86	17.21	26.03	10.22

*One school did not return any reading Teacher Questionnaire.

**The small discrepancies between these figures and the corresponding ones in Table 6-9 reflect the inconsistent responses by some teachers to the two related items.

Table 6-12

Types of Math Sub-Groups by School CE Receipt Category and Enrollment Size (Percentage of Teachers Creating the Type of Sub-Group)

		School's CE Receipt Category					
		Title I Schools		Other CE Schools		Non-CE Schools	
Types of Math Sub-Groups		Small (N=82)	Large (N=75)	Small (N=19)	Large (N=37)	Small (N=21)	Large (N=8)
Single grade, same math level	Mean	20.10	33.58	25.77	33.14	20.70	30.32
	S.D.	19.27	21.40	18.60	20.01	17.16	17.20
Single grade, different math level	Mean	17.43	24.92	16.17	24.26	14.64	26.77
	S.D.	18.52	15.90	13.83	17.00	19.75	16.53
Different grades, same math level	Mean	7.68	3.98	9.14	5.17	7.31	6.30
	S.D.	17.77	7.85	14.67	9.89	13.02	11.83
Different grades, different math level	Mean	1.10	1.47	2.12	0.98	0.60	1.59
	S.D.	3.42	4.06	5.12	2.95	2.73	3.12
Ungraded class, same math level	Mean	2.81	2.31	0.00	0.42	0.00	7.58
	S.D.	12.02	11.96	0.00	1.45	0.00	14.12
Ungraded class, different math level	Mean	2.44	1.37	0.35	0.16	1.98	2.27
	S.D.	7.16	5.72	1.53	0.97	6.40	6.43
Does not form sub-groups*	Mean	48.45	32.37	46.44	35.86	54.77	25.17
	S.D.	27.63	24.02	22.63	24.36	28.36	16.71

*The small discrepancies between these figures and the corresponding ones in Table 6-10 reflect the inconsistent responses by some teachers to the two related items.

Frequency of Changes in Instructional Sub-Groups. The data in Table 6-13 show no major differences in annual frequency of changes in reading groups. For math, teachers in large Title I schools and large non-CE schools reported more frequent changes of instructional sub-groups.

School Facilities. Table 6-14 contains the percentages of schools reporting the presence of a centralized library, reading resource center, and math resource center. The majority of schools in the sample have a centralized library regardless of their enrollment size and receipt of CE funds. CE schools are more likely to have reading and math resource centers than are non-CE schools. For both Title I schools and Other CE schools, a greater percentage of large schools report the existence of a reading and math resource center, as compared with the small schools. It may also be noted that resource centers for reading are available to more schools than those for math. Only a few of the small schools, and none of the large schools, reported that they do not have any of the three facilities.

Frequency of Audio-Visual Exposure. The monthly use of Audio-Visual equipment reflects both use by teaching staff for group instruction and use by students independently. Teacher ratings of the frequency of use for each kind of equipment (reading machines, sound projectors, etc.) by teaching personnel or by individual students were converted to a measure signifying the number of times used per month. A total of eleven such measures was obtained and the sum was employed as an index of the extent of audio-visual exposure for the students of each teacher. The index ranges from 0 to 160. These teacher-level data were then aggregated to the school-level and analyzed. The results, in Table 6-15, are that low-achieving students tend to have greater exposure to audio-visual equipment than do regular-achieving students. There is some tendency for students in Title I schools to have greater audio-visual exposure than those in other schools, but the data do not indicate consistent trends when controlled for school enrollment size. Similar patterns were found for reading and math, although the use of audio-visual equipment in reading instruction is uniformily more frequent than that in math across all six groups of schools, and for both low-achieving and regular-achieving students.

Instructional Assistance from Additional Personnel. The data in Table 6-16 indicate that reading teachers in CE schools, particularly Title I schools, typically receive more hours per week of assistance from special teachers and aides/assistants in their teaching activities than teachers in non-CE schools. The amount of assistance in reading instruction from volunteers, student teachers or tutors is considerably less than that from special teachers or aides. There are no clear distinctions among the schools receiving different CE funds, with respect to these latter kinds of instructional assistance. The differences between small and large schools do not follow consistent patterns across school CE receipt category and type of assistance. Similar results were found for math, but the amount of help by several math teachers is noticeably less than that for reading. Regarding support from counselors and specialists, teachers in CE schools appear to have slightly greater support of these kinds available to them, in comparison with teachers in non-CE schools. The average hours of support per month are small with the exception of assistance from speech therapists in reading.

Table 6-13

Frequency of Changes per Year in Reading and Math Instructional Sub-Groups, by School CE Receipt Category and Enrollment Size

		School's CE Receipt Category					
		Title I Schools		Other CE Schools		Non-CE Schools	
Type of Group Changes		Small (N=82)	Large (N=75)	Small (N=19)	Large (N=37)	Small (N=21)	Large (N=8)
Reading group changes*	Mean	4.44	4.52	4.66	3.97	3.07	4.18
	S.D.	3.55	2.67	3.70	1.84	1.98	1.95
Math group changes	Mean	4.48	7.28	5.85	5.81	3.91	6.83
	S.D.	4.43	5.43	6.17	3.25	4.14	3.86

*One large Title I school did not return any reading Teacher Questionnaire and thus reduces the corresponding sample size from 75 to 74.

Table 6-14

Availability of School Facilities by School CE Receipt Category and Enrollment Size

School CE Receipt Category	Type of Facility							
	Centralized Library		Reading Resource Center		Math Resource Center		None	
Enrollment Size	Percent	Count	Percent	Count	Percent	Count	Percent	Count
Title I Schools								
Small (N=82)	83	68	52	43	29	24	11	9
Large (N=75)	93	70	76	57	40	30	0	0
Total (N=157)	88	138	64	100	34	54	6	9
Other CE Schools								
Small (N=19)	95	18	53	10	16	3	0	0
Large (N=37)	92	34	84	31	38	14	0	0
Total (N=56)	93	52	73	41	30	17	0	0
Non-CE Schools								
Small (N=21)	86	18	33	7	19	4	14	3
Large (N=8)	100	8	25	2	13	1	0	0
Total (N=29)	90	26	31	9	17	5	10	3

Table 6-15

Total Number of Times per Month Audio-Visual Equipment is Used for Reading and Math Instruction, by Student Achievement Status, by School CE Receipt Category and Enrollment Size

Subject Area and Student's Achievement Status		School CE Receipt Category and Enrollment					
		Title I		Other-CE		Non-CE	
		Small (N=82)	Large (N=75)*	Small (N=19)	Large (N=37)	Small (N=21)	Large (N=8)
Reading instruction							
Regular-achieving students	Mean	14.25	19.48	15.25	16.98	11.21	19.71
	S.D.	12.52	14.99	11.63	8.17	8.52	12.92
Low-achieving students	Mean	19.72	23.37	17.07	20.32	12.75	24.27
	S.D.	13.89	15.35	10.87	11.17	8.27	14.47
Math instruction							
Regular-achieving students	Mean	6.25	8.24	5.04	6.36	4.43	8.58
	S.D.	6.88	10.43	5.65	5.68	4.37	5.20
Low-achieving students	Mean	8.19	10.48	5.63	8.25	4.59	9.72
	S.D.	8.60	11.61	6.16	9.72	4.04	4.87

*N=74 for reading because one school has not returned any reading teacher questionnaire.

Table 6-16

Amount of Assistance from Additional Reading and Math Personnel by School CE Receipt Category and Enrollment Size*

		School CE Receipt Category and Enrollment					
		Title I Schools		Other CE Schools		Non-CE Schools	
Type of Additional Personnel		Small (N=82)	Large (N=75)**	Small (N=19)	Large (N=37)	Small (N=21)	Large (N=8)
Reading personnel							
Special reading teacher	Mean	1.26	1.41	0.74	1.17	0.20	0.14
	S.D.	0.82	0.77	0.65	0.80	0.40	0.19
Teaching aide	Mean	1.33	1.23	0.93	0.70	0.32	0.68
	S.D.	1.06	1.04	1.30	0.75	0.49	0.91
Volunteer	Mean	0.18	0.23	0.32	0.24	0.22	0.43
	S.D.	0.42	0.36	0.63	0.33	0.44	0.34
Student teacher	Mean	0.10	0.14	0.03	0.15	0.07	0.29
	S.D.	0.34	0.34	0.08	0.26	0.19	0.43
Student tutor	Mean	0.17	0.21	0.24	0.23	0.26	0.09
	S.D.	0.34	0.32	0.48	0.31	0.43	0.18
Counselor/ psychologist	Mean	0.16	0.20	0.15	0.32	0.15	0.09
	S.D.	0.32	0.20	0.31	0.43	0.38	0.15
Speech therapist	Mean	0.92	0.79	0.77	0.86	0.82	0.71
	S.D.	0.78	0.52	0.72	0.66	0.81	0.69
Media specialist	Mean	0.19	0.38	0.13	0.46	0.05	0.19
	S.D.	0.37	0.47	0.25	0.55	0.14	0.27
Math Personnel							
Special math teacher	Mean	0.46	0.64	0.09	0.57	0.06	0.00
	S.D.	0.69	0.83	0.20	0.70	0.17	0.00
Teaching aide	Mean	1.16	1.06	0.79	0.60	0.21	0.22
	S.D.	1.20	1.15	1.13	0.82	0.56	0.40
Volunteer	Mean	0.12	0.17	0.20	0.14	0.08	0.21
	S.D.	0.35	0.54	0.36	0.31	0.23	0.29
Student teacher	Mean	0.10	0.18	0.07	0.15	0.06	0.21
	S.D.	0.29	0.41	0.29	0.30	0.22	0.31
Student tutor	Mean	0.22	0.19	0.25	0.22	0.20	0.13
	S.D.	0.47	0.32	0.47	0.26	0.45	0.17
Counselor/ psychologist	Mean	0.06	0.10	0.13	0.12	0.02	0.06
	S.D.	0.17	0.47	0.28	0.26	0.09	0.13
Media specialist	Mean	0.08	0.07	0.06	0.09	0.02	0.04
	S.D.	0.23	0.18	0.23	0.18	0.09	0.13

*Entries in the Table are hours per week for the first five types of personnel, and hours per month for the last three types of personnel.

**Only 74 schools are tabulated for reading items because one school did not return any reading Teacher Questionnaire.

Distribution of CE Services by Grade Level and Funding Sources

The first section of this chapter deals with differences in instructional services received by CE students selected for services from different kinds of fund sources. At the student level, the number of hours of services received was compared among three categories of CE selectees. The second section describes services provided and a variety of teacher-reported instructional practices in Title I, Other CE, and Non-CE schools. These analyses were performed at the school level. The present section turns its attention to the distribution of CE services by grade levels. The aim is to determine whether differences in services across grade levels, discussed in Chapter 3, are similar for the three categories of CE selectees: Title I selectees, Other CE selectees in Title I-plus-Other-CE schools, and Other CE selectees in Other CE schools.

Data are presented for five descriptive areas: (1) the percentage of low-achieving students selected for CE services, (2) per-participant CE expenditures, (3) class size and class composition, (4) the amount of instruction offered and the services received, and (5) the extent of non-instructional services received. Except for the first item, the analysis for each of these areas was performed at the student level.

Percentage of Low-Acheiving Students Selected for CE Service. For this analysis, low-achieving students were defined as those who scored at or below the 33rd percentile on achievement tests in the subject area being analyzed. Students who scored above the 33rd percentile and students who were in schools that do not receive CE funds were not included.

Since Title I expenditures account for about one-third of all federal expenditures for education, and since relatively few states or districts have large-scale CE programs, one might expect that Title I schools serve a larger percentage of low-achieving students than do schools with Other CE funds. As Table 6-17 shows, the percentage of low-achieving students who were selected to receive CE services in each grade is higher for Title I schools than for Other CE schools. It should be noted, however, that some Title I schools also receive Other CE funds to augment their CE programs. There are some differences in these percentages among the grade levels, but no systematic trend is apparent. There is a weak tendency for the percentages to peak at the third grade for the Title I schools. As previously noted in Chapter 3, the percentage of low-achieving students selected is uniformly higher for reading than for math.

Per-Participant CE Expenditures. The CE expenditures for each selectee in a subject area were obtained by first apportioning the school's expenditures from each type of CE funds to the students selected for services in that subject area from the given funds. Then the prorated expenditures were summed over all applicable types of CE funds that support services provided to the selectee. Table 6-18 contains the means and standard deviations of such prorated CE expenditures for three categories of CE selectees, by grade level. In obtaining the means, only CE selectees in schools for which valid expenditure data were available were included in the computations.

Table 6-17

Percentage of Low-Achieving Students in CE Schools Who Receive CE Services, by School Funding Source

	Reading						Math					
	Title I Schools		Other CE Schools		Total		Title I Schools		Other CE Schools		Total	
Grade	Percent Selected	N*	Percent Selected	N	Percent Selected	N	Percent Selected	N	Percent Selected	N	Percent Selected	N
1	31.6	3,542	22.8	1 110	29.5	4,652	21.9	3,595	16.1	1,084	20.6	4,679
2	49.9	3,256	48.4	711	49.6	3,967	26.2	3,113	20.8	740	25.2	3,853
3	54.8	3,127	41.8	720	52.4	3,847	31.3	3,240	24.7	806	30.0	4,046
4	48.1	3,008	38.9	751	46.3	3,759	29.5	3,005	22.0	942	27.7	3,947
5	46.5	3,186	42.9	869	45.7	4,055	28.1	3,026	26.9	959	27.8	3,985
6	43.7	3,038	28.3	1,338	39.0	4,376	24.9	3,151	18.5	1,540	22.8	4,691

*Number of low-achieving students in the schools.

Table 6-18

Per-Participant CE Expenditures for Selectees by Funding Category and by Grade Level

	Title I Selectees in Title I Schools			Other-CE Selectees in Title I Schools			Other-CE Selectees in Other-CE Schools		
Grade	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
CE Expenditures for Reading Services									
1	$333	$223	1,741	$197	$235	667	$262	$211	288
2	353	239	1,865	189	199	685	321	214	358
3	367	239	1,954	172	196	554	290	228	303
4	358	222	1,606	162	187	528	259	145	367
5	359	223	1,469	119	120	446	271	188	367
6	347	227	1,197	142	200	566	264	200	387
CE Expenditures for Math Services									
1	$254	$215	839	$122	$111	246	$141	$103	199
2	228	202	830	127	109	214	175	150	165
3	267	216	948	173	154	213	146	141	198
4	245	192	872	159	158	275	174	135	254
5	267	203	741	162	169	211	174	121	274
6	233	173	615	103	123	260	176	130	270

It may be seen from the Table that there are only small differences among grades. The small variation across grades reflects primarily the different types of CE funds involved in providing services to selectees at different grade levels. On the other hand, there are considerable differences in per-participant CE expenditures among the selection categories. For both reading and math, Title I selectees in Title I schools are allocated higher CE expenditures than the other two groups of selectees. Because about only one-sixth of Title I selectees receive services supported by additional non-Title I CE funds, this finding suggests that Title I programs still provide more funds per-participant than Other CE programs. For all three categories of CE selectees, not only a greater number of students are selected for reading services, but also the average prorated CE expenditures are larger for reading than for math, with few exceptions. These results confirm that the current emphasis of compensatory services is on reading.

Class Size and Class Composition. The data used for the analyses here were explained in Chapter 3. Mean class sizes for the three categories of CE selectees were presented earlier as part of Table 4-2. For convenience, they are repeated in Table 6-19. Within a given grade, the differences among the three selection categories are small. Though there is some tendency for class size to be larger in the higher grades for all three selection categories, no systematic trends across grades are evident. The results for reading and math are similar, but math class sizes are uniformly larger.

The results for class composition, shown in Table 6-20, are different. There is little difference in class composition among grades, particularly for reading. However, there are major differences among the three categories of CE selectees. Typically, Other CE selectees in Title I schools attend classes with the highest concentration of CE students, while Title I selectees tend to be in classes with the lowest percentage of CE students. On the average, the classes attended by non-Title I CE selectees in Title I schools are composed of approximately two-thirds of CE students. One possible explanation for the result is that this category only exists in schools that receive both Title I and Other CE funds, and thus may select more students for CE services.

Amount of Instruction Offered and Services Received. The data for these analyses were obtained from the Student Participation and Attendance Records. The difference between the data presented in Table 6-21 and those in Table 4-1 is that students' absence records have been used to adjust the hours offered in the latter case.

Only students selected to receive CE services in reading or math were included in the analyses. For the amount of instruction offered, a two-way ANOVA was performed with grade and student selection category as the independent variables.

Of these categories of CE selectees, Title I selectees in Title I schools typically are offered more hours of math instruction during the school year than the other two groups. The differences are appreciable across all grades except for grade 3. Employing the two-way ANOVA model, the results show that, independent of the grade effect, the selection category accounts for 6.1 percent of variances in math hours offered. The variation across grades for each group of selectees is insubstantial. The picture for reading is different: Title I selectees in Title I schools also tend to be offered more hours of instruction than

Table 6-19

Mean Class Sizes for CE Selectees in Reading or Math

	Title I Selectees in Title I Schools			Other-CE Selectees in Title I Schools			Other-CE Selectees in Other-CE Schools		
Grade	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
				Class Size for Reading					
1	17.53	9.08	1,720	16.91	8.84	861	17.90	9.71	562
2	16.70	9.44	1,845	19.54	9.71	857	17.81	10.16	620
3	19.13	9.44	1,900	17.96	9.66	743	21.29	10.44	559
4	20.19	9.42	1,560	21.25	9.24	673	20.96	9.69	525
5	20.28	9.30	1,420	20.15	10.18	564	22.25	8.92	545
6	22.70	8.80	1,121	21.10	9.04	537	23.14	9.06	489
				Class Size for Math					
1	21.75	8.08	910	21.80	7.55	774	20.73	8.25	364
2	23.69	7.72	901	23.72	8.15	625	20.37	9.08	283
3	24.46	7.81	983	20.82	8.87	551	24.41	7.37	367
4	23.56	8.01	847	23.83	8.09	616	26.11	8.73	333
5	23.75	8.59	828	24.58	8.18	480	25.54	9.43	396
6	25.36	8.13	620	25.65	5.19	656	24.62	11.31	374

Table 6-20

Mean Percentage of CE Students in Reading or Math Classes Associated with CE Selectees*

	Title I Selectees in Title I Schools			Other-CE Selectees in Title I Schools			Other-CE Selectees in Other-CE Schools		
Grade	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
				Percentage of CE Students in Reading Classes					
1	40.0	24.7	1,746	66.7	33.9	874	45.5	38.1	579
2	35.4	24.6	1,866	66.1	33.9	888	39.7	35.0	624
3	37.2	25.3	1,957	65.9	33.8	766	40.4	35.1	585
4	38.0	24.9	1,607	64.8	36.4	723	42.2	38.6	537
5	37.1	23.7	1,509	67.0	34.9	678	37.3	38.2	555
6	38.6	24.8	1,201	62.7	35.8	760	38.7	40.4	560
				Percentage of CE Students in Math Classes					
1	40.0	26.2	928	66.6	35.9	789	60.8	38.4	377
2	38.9	27.4	908	71.2	33.9	674	59.1	39.3	320
3	40.2	30.0	1,041	64.1	36.6	583	48.9	38.9	407
4	38.4	27.9	936	61.9	40.5	660	51.7	43.2	370
5	37.8	27.7	866	65.7	38.7	572	44.2	41.8	417
6	41.7	29.4	685	66.2	38.3	665	45.2	43.6	436

*Means were computed with student, not class, as unit of analyses.

Table 6-21

Mean Number of Hours of Instruction Offered in Reading and Math During the School Year, by CE Selection Category

	Title I Selectees in Title I Schools			Other-CE Selectees in Title I Schools			Other-CE Selectees in Other-CE Schools		
Grade	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
	Hours per Year of Instruction Offered in Reading								
1	329.10	104.06	1,708	317.60	118.20	843	295.91	86.99	562
2	302.31	99.99	1,836	298.67	111.18	861	287.00	102.95	609
3	276.79	91.11	1,915	280.37	86.06	740	277.37	99.61	555
4	261.87	87.67	1,575	232.60	70.48	713	241.77	66.32	529
5	239.07	80.59	1,470	227.93	78.96	657	226.27	55.67	552
6	236.50	81.05	1,172	200.88	70.21	750	208.94	66.18	556
	Hours per Year of Instruction Offered in Math								
1	195.14	66.19	902	152.65	42.61	760	178.18	46.30	365
2	197.38	57.95	889	159.69	41.50	646	180.66	32.60	308
3	207.74	58.52	1,010	184.28	39.90	567	210.75	75.38	380
4	210.88	74.92	917	196.21	51.40	652	200.66	63.78	363
5	219.86	67.24	845	173.20	41.97	550	185.96	32.60	415
6	197.48	61.15	671	166.29	34.10	652	183.61	34.69	434

other selectees. The results of ANOVA indicate that 12.9 percent of the total variance in hours of reading services offered is attributable to grades. Partialling out the grade effect, selection categories account for very small portions of the total variances. Indeed, the differences among the selectee groups are substantial only for grades 1, 4 and 6.

We now turn to examine the differences with respect to the ten service profile items. The data shown in Table 6-22 are extracted from Tables 4-3 to 4-8. Similarly, Table 6-23 contains data previously presented in Tables 4-9 to 4-14.

Previous results show that the major differences in amount of services received between the CE selectees and non-selectees lie in instruction by special teachers and assistance by aides. We therefore focus the discussion on these items. Inspection of the means in Table 6-22 reveals that while the total hours of reading services decrease steadily as grade level increases (see Chapter 4), such a trend does not exist for the combined hours of reading instruction by special teachers. This finding applies to all three categories of selectees. Thus, in terms of percentage of time devoted to instruction by special teachers, there are differential emphases on such instruction for the selectees among grades. In our sample, there is a proportionally greater use of special teachers in reading for the 6th graders. With respect to assistance from paid aides, the average hours received do decrease with grades, particularly for the non-Title I CE selectees. For all grades, Title I selectees typically receive more of these reading services than Other CE selectees.

While the total hours of math instruction received generally do not vary much with grades, the hours received from special teachers in either small or medium groups tend to be smaller for the first two grades than others. This is particularly the case for the non-Title I CE selectees. Thus it seems that special teachers are utilized more to provide math instruction to CE selectees in the higher grades. There is some tendency for the amount of assistance received from aides/assistants to decrease with grades for all three selectee groups. A pronounced decrease occurs for Other CE selectees in Title I schools between grade 3 and grade 4. Again, Title I selectees tend to receive more math instruction from special teachers and aides, compared with the other two groups of selectees.

Receipt of Non-Instructional Services. In this set of analyses, the two variables of interest are the percentage of students receiving guidance and counseling CE services and the percentage of students receiving health and nutrition CE services. These percentages are provided in Table 6-24 and 6-25, by grade, and by both reading and math student-selection categories. The selection categories used include the three types of students not receiving CE services, as well as the CE students. Although the percentages are small and quite variable, some patterns are detectable. For guidance and counseling services, the highest percentages of students receiving such services are CE students in non-Title I schools, while the lowest percentages are for non-CE students in both Title I and Other CE schools. Exceptions are found notably in grade 1 where Other CE selectees in Title I schools have the highest percentages. Comparatively larger percentages of students receiving health and nutrition CE services are found for the three groups of CE students, with non-CE students having much lower percentages. Thus, it appears that health and nutrition services are more closely associated with CE programs than are guidance and counseling services.

Table 6-22

Reading Service Profiles by Grade and by CE Selection Category (Hours Received per Year)

		Title I Students in Title I Schools						Other CE Students in Title I Schools						Other CE Students in Other CE Schools					
Service	N=	Gr. 1 (1,708)	Gr. 2 (1,836)	Gr. 3 (1,915)	Gr. 4 (1,575)	Gr. 5 (1,470)	Gr. 6 (1,172)	Gr. 1 (843)	Gr. 2 (861)	Gr. 3 (740)	Gr. 4 (713)	Gr. 5 (657)	Gr. 6 (750)	Gr. 1 (562)	Gr. 2 (609)	Gr. 3 (555)	Gr. 4 (529)	Gr. 5 (552)	Gr. 6 (556)
Classroom teacher, 21+ students	Mean	41.69	28.51	33.09	36.11	40.85	25.23	36.91	31.50	20.07	21.71	32.25	35.21	22.55	22.04	40.66	30.44	29.36	31.06
	S.D.	63.33	51.92	56.26	58.67	60.61	48.60	51.17	57.35	34.07	38.51	52.10	40.98	40.35	39.18	67.19	45.20	46.66	43.69
Classroom teacher, 14-20 students	Mean	12.27	9.65	10.66	16.88	15.67	13.99	14.38	8.94	7.75	5.73	11.91	11.87	6.62	14.35	15.26	13.81	8.19	12.97
	S.D.	35.76	33.67	29.24	38.91	34.59	31.73	47.73	33.60	26.78	22.29	32.33	32.53	21.32	40.93	38.90	32.78	25.81	33.67
Classroom teacher, 7-13 students	Mean	51.35	57.70	46.13	40.54	30.43	37.61	68.31	71.93	58.30	52.24	44.94	31.69	48.31	54.69	40.13	35.11	43.69	28.63
	S.D.	55.02	59.21	52.96	41.29	42.73	52.79	62.77	60.72	61.39	55.86	48.53	48.25	61.27	65.72	51.87	46.70	48.54	41.28
Classroom teacher, 1-6 students	Mean	43.62	40.43	33.19	27.24	22.89	25.97	45.05	36.92	35.51	32.05	20.58	20.40	58.02	41.60	38.49	21.42	19.74	17.53
	S.D.	51.67	56.39	43.10	39.61	34.32	35.97	52.04	53.32	39.80	43.51	33.86	32.06	61.33	48.14	48.84	33.32	30.18	31.44
Special teacher, 7+ students	Mean	14.98	19.19	18.10	13.46	13.12	20.39	5.94	4.71	6.09	5.75	10.97	17.51	7.82	6.72	12.57	12.40	11.51	11.88
	S.D.	34.53	34.79	32.02	30.04	28.76	40.75	20.91	18.50	18.77	19.08	34.24	42.44	22.17	18.26	35.19	26.49	32.78	31.70
Special teacher, 1-6 students	Mean	26.34	29.76	24.57	27.62	23.77	25.34	9.07	14.93	18.75	14.84	13.33	9.97	19.42	27.67	26.48	24.02	18.59	16.81
	S.D.	41.08	41.61	33.21	34.00	36.02	36.74	25.34	36.40	43.27	31.00	31.48	27.60	37.55	40.05	42.71	38.54	34.25	32.85
Aide or assistant, 1-10 students	Mean	26.62	20.92	23.09	16.54	19.23	14.52	26.86	20.24	18.60	11.43	7.53	7.95	16.28	12.51	15.59	13.43	11.66	10.70
	S.D.	39.79	32.67	33.04	25.75	32.26	30.25	33.64	31.29	29.57	24.82	16.60	18.16	24.47	21.94	25.71	26.62	21.85	24.13
Tutor or volunteer individual	Mean	2.99	2.08	2.25	1.45	1.10	1.55	4.80	1.80	1.25	0.83	0.75	0.52	1.88	3.25	1.35	2.53	4.61	3.41
	S.D.	9.67	7.96	7.68	6.90	4.64	5.56	12.47	7.41	4.87	4.34	4.15	4.80	6.80	10.29	4.34	8.29	9.32	7.40
Ind. work programmed material	Mean	9.73	10.31	7.27	8.62	9.90	9.46	3.53	4.40	9.73	4.88	7.15	8.76	10.71	7.86	6.76	15.50	14.36	17.85
	S.D.	28.70	26.74	19.40	20.57	21.94	17.05	14.38	21.02	19.73	13.52	17.24	20.13	26.10	21.56	26.10	32.98	29.46	31.82
Ind. work non-programmed material	Mean	70.96	63.39	58.30	55.27	44.87	46.51	78.01	84.04	85.73	68.36	60.39	43.85	85.41	79.90	64.44	58.23	51.67	44.13
	S.D.	53.68	51.85	43.95	42.48	40.71	38.05	58.75	56.65	61.08	55.28	51.88	41.16	52.14	56.41	38.39	42.36	29.32	28.81

Table 6-23

Math Services Profiles by Grade and by CE Selection Category (Hours Received per Year)

		Title I Students in Title I Schools						Other CE Students in Title I Schools						Other CE Students in Other CE Schools					
Service	N=	Gr. 1 (902)	Gr. 2 (889)	Gr. 3 (1,010)	Gr. 4 (917)	Gr. 5 (845)	Gr. 6 (671)	Gr. 1 (760)	Gr. 2 (646)	Gr. 3 (567)	Gr. 4 (652)	Gr. 5 (550)	Gr. 6 (652)	Gr. 1 (365)	Gr. 2 (308)	Gr. 3 (380)	Gr. 4 (363)	Gr. 5 (415)	Gr. 6 (434)
Classroom teacher, 21+ students	Mean	51.85	53.68	53.93	56.44	54.64	33.83	35.21	33.97	53.20	52.11	54.38	39.48	28.59	33.28	59.40	54.54	39.38	44.02
	S.D.	47.65	50.88	56.89	58.57	58.78	48.10	39.50	36.21	55.28	50.10	59.70	45.02	48.76	51.74	62.31	45.87	44.73	48.07
Classroom teacher, 14-20 students	Mean	12.18	17.02	10.86	15.24	11.81	20.12	18.71	13.00	15.19	13.69	10.37	12.28	9.24	5.09	8.78	5.59	6.16	9.81
	S.D.	34.06	32.01	20.97	32.47	28.71	38.62	37.17	32.82	31.55	33.59	25.71	24.83	25.01	15.58	20.22	14.93	21.16	29.37
Classroom teacher, 7-13 students	Mean	17.01	11.59	21.95	14.68	23.84	19.82	15.80	16.56	12.40	25.94	16.94	18.00	19.99	32.29	20.59	9.98	21.53	14.36
	S.D.	26.03	22.82	33.27	26.58	40.20	39.27	26.67	26.53	25.18	50.40	36.10	31.84	31.43	40.44	34.33	20.86	33.02	31.07
Classroom teacher, 1-6 students	Mean	12.77	9.27	13.44	17.75	16.04	22.33	12.72	10.64	13.92	14.70	18.17	20.59	20.48	15.79	14.51	13.26	15.51	11.60
	S.D.	20.82	19.45	20.72	30.68	27.06	31.76	19.65	20.16	20.44	31.38	26.39	24.58	24.81	25.13	24.88	21.80	22.52	20.53
Special teacher, 7+ students	Mean	13.56	10.15	13.76	8.84	15.88	14.77	1.11	0.94	1.65	1.08	2.72	2.16	2.26	4.97	3.22	6.49	8.75	11.68
	S.D.	26.59	20.83	24.26	18.40	30.77	30.06	7.27	7.53	7.39	5.40	10.32	13.77	8.43	14.68	13.16	17.29	23.44	30.35
Special teacher, 1-6 students	Mean	4.69	10.02	10.69	13.44	18.19	14.61	2.43	2.75	5.53	8.92	6.27	4.80	4.79	5.60	9.24	13.53	9.72	8.61
	S.D.	12.77	29.61	18.61	22.89	34.73	29.18	10.29	15.34	18.51	22.65	21.78	16.41	14.63	15.67	21.93	30.35	21.40	19.40
Aide or assistant, 1-10 students	Mean	20.11	16.24	19.86	13.23	16.48	13.78	11.31	16.64	11.54	3.82	3.97	3.90	14.76	15.86	15.21	13.64	9.71	9.62
	S.D.	26.88	22.01	24.41	19.37	28.77	23.10	17.05	25.80	18.65	11.67	11.17	11.92	15.60	15.89	22.74	22.60	14.89	14.30
Tutor or volunteer individual	Mean	1.52	1.26	1.75	1.42	1.63	1.64	1.90	1.34	0.80	0.46	0.52	1.48	1.33	2.14	1.11	1.35	2.45	2.82
	S.D.	5.97	4.26	5.63	5.33	5.09	4.83	5.13	4.01	2.73	2.93	3.06	6.67	4.43	5.94	3.23	3.80	6.52	6.52
Ind. work, programmed material	Mean	2.90	6.34	4.27	8.66	7.58	3.79	1.58	2.70	1.12	1.46	6.91	9.98	0.93	4.09	8.11	17.52	10.43	16.87
	S.D.	8.65	14.77	11.11	20.02	18.68	13.12	7.25	15.10	3.48	6.46	18.13	24.47	3.79	11.28	26.43	39.57	22.59	29.34
Ind. work, non-programmed material	Mean	38.75	46.63	41.66	45.89	37.20	37.27	40.65	51.19	55.67	60.87	41.16	43.13	65.32	52.43	58.54	51.92	51.08	40.84
	S.D.	27.02	26.11	30.05	33.30	34.55	35.17	22.93	24.62	34.09	37.55	34.39	31.43	37.94	34.07	35.02	35.66	27.31	29.22

Table 6-24

Percentage of Students Receiving Guidance and Counseling Services, by CE Selection Category

	Title I Selectees in Title I Schools		Other-CE Selectees in Title I Schools		Other-CE Selectees in Other-CE Schools		Non-Selectees in Title I Schools		Non-Selectees in Other-CE Schools		Non-Selectees in Non-CE Schools	
Grade	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count
					Reading Selection Category							
1	3.0%	47	11.5%	95	4.9%	26	1.3%	86	0.7%	21	6.5%	83
2	4.6%	77	6.1%	52	10.2%	57	1.1%	61	3.5%	87	6.7%	77
3	5.9%	107	5.1%	37	8.3%	43	1.2%	63	2.0%	51	3.3%	39
4	3.3%	46	3.9%	26	10.2%	45	1.5%	82	1.7%	43	6.7%	80
5	4.2%	55	1.4%	9	10.5%	49	1.0%	58	1.3%	35	4.1%	52
6	5.1%	52	6.4%	45	13.6%	67	1.4%	80	1.2%	53	5.9%	98
					Math Selection Category							
1	5.2%	41	12.0%	91	4.1%	14	1.3%	96	1.1%	33	6.5%	83
2	6.8%	55	7.4%	47	14.9%	42	1.3%	88	3.7%	102	6.7%	77
3	9.0%	85	4.0%	22	8.5%	31	1.6%	100	2.4%	63	3.3%	39
4	4.2%	33	1.8%	11	13.9%	41	1.8%	110	1.8%	47	6.7%	80
5	5.4%	40	1.1%	6	10.7%	37	1.2%	76	1.7%	47	4.1%	52
6	5.9%	33	3.0%	18	9.2%	35	1.9%	126	1.9%	85	5.9%	98

Table 6-25

Percentage of Students Receiving Health and Nutrition Services, by CE Selection Category

	Title I Selectees in Title I Schools		Other-CE Selectees in Title I Schools		Other-CE Selectees in Other-CE Schools		Non-Selectees in Title I Schools		Non-Selectees in Other-CE Schools		Non-Selectees in Non-CE Schools	
Grade	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count
						Reading Selection Category						
1	12.1%	192	22.0%	182	10.3%	55	3.3%	217	1.1%	31	1.3%	17
2	15.7%	268	16.4%	139	11.5%	64	4.5%	244	0.2%	6	0.8%	9
3	15.4%	277	9.5%	69	12.3%	64	4.9%	261	0.2%	6	0.8%	10
4	11.7%	160	7.5%	50	9.2%	40	5.7%	305	0.7%	17	0.2%	2
5	12.8%	170	6.0%	38	6.4%	30	5.1%	284	0.5%	13	0.7%	9
6	10.0%	103	16.9%	118	17.8%	87	3.9%	232	1.1%	45	0.3%	5
						Math Selection Category						
1	14.8%	123	24.2%	183	15.6%	54	3.8%	285	1.0%	32	1.3%	17
2	18.5%	152	21.9%	139	19.6%	55	5.5%	360	0.6%	15	0.8%	9
3	23.0%	216	14.1%	77	16.7%	61	5.0%	314	0.3%	9	0.8%	10
4	14.8%	116	10.1%	62	12.9%	37	5.6%	337	0.8%	20	0.2%	2
5	15.8%	118	2.5%	13	8.4%	29	5.8%	361	0.5%	14	0.7%	9
6	17.9%	100	10.5%	63	22.5%	85	4.5%	290	1.1%	47	0.3%	5

In summary, the major differences in receipt of services among the three categories of CE selectees and across the grades are as follows:

- Per-participant CE expenditures in both reading and math are higher for Title I students than for Other CE students, and these differences are consistent over grades.
- Title I students are generally in classes that have lower percentages of CE students in them than do classes in which Other CE students are located, and again these differences are consistent across grades.
- In math, Title I students are offered more total hours of instruction than are Other CE students, consistent across grades.
- In both reading and math, Title I students receive more instruction by special teachers than do Other CE students, consistent across grades.
- CE students in all grades are more likely than non-CE students to receive non-instructional CE services, especially health and nutrition services.

PART III. FUND ALLOCATIONS AND THE SELECTION PROCESS FOR COMPENSATORY-EDUCATION PROGRAMS

CHAPTER 7. TITLE I ALLOCATIONS AND EXPENDITURES

Descriptions of the expenditures under various CE programs and the local characteristics that may influence how total expenditures are distributed are of great interest to policy makers and to educators. Knowledge of per-pupil expenditures provides us with more information on the extent of CE programs than knowledge only of the proportions of students served. In this chapter, we address the effects of district fund-allocation practices and services to students in public and non-public schools.

Regular and CE Per-Pupil Expenditures Under Different District Title I Allocation Practices

Table 7-1 presents per-pupil expenditures for schools receiving Title I funds (and possibly also Other CE funds), schools receiving only Other CE funds, and schools receiving no CE funds. The schools receiving Title I funds have been further categorized according to six district Title I fund-allocation practices. The per-pupil expenditures are reported for the regular (or base) school program, for Title I, and for all CE programs combined. From the bottom row of the table it may be seen that in general both the Title I and the total CE per-pupil expenditures are about 35 percent of the regular expenditures.

The Title I per-pupil expenditures range from $284 to $479, with some indication that where districts distribute their Title I funds equally, or on the basis of school total enrollment, the Title I per-pupil expenditures are less than for other distribution practices. For schools in districts with Title I allocations based on concentrations of low-achieving students, the overall CE per-pupil expenditures are lower than those for Title I. This is likely the result of smaller per-pupil allocations of the Other-CE funding sources combined with the tendency to serve additional students with the funds. For schools in districts that allocate Title I funds on the basis of equal funding, school enrollments, or school poverty ranks, the addition of Other CE funds results in increases of CE per-pupil expenditures, likely the result of a tendency to add the Other CE-funded services onto those supported by Title I. Such increases, however, are not large in magnitude. Schools that receive only Other CE funds have, on the average, the highest per-pupil CE expenditures.

District Title I Expenditures for Non-Public School Students

Of the Title I districts that indicated delivery of Title I services to students in non-public schools, 98 districts have reported the associated expenditures. For these districts, the average annual expenditure was $125,491, and the average number of students served was 297 (see Table 7-2). The amount of district-to-district variation in dollars expended and students served is substantial, as shown by the standard deviations in comparison to the corresponding means.

Table 7-1

Average Per-Pupil Expenditures (in Whole Dollars) for Schools in Different CE Receipt Categories, and for Title I Schools in Districts with Different Title I Allocation Practices

School's CE Receipt Category District Title I Allocation Practices	School Regular Per-Pupil Expenditure			School Title I Per-Pupil Expenditure			School Total CE Per-Pupil Expenditure		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Title I Schools									
District Level Project	57	$1,271	$514	56*	$439	$264	56*	$439	$269
Based on Equal Funding	23	$1,319	$587	23	$374	$222	23	$391	$224
Based on School's Total Enrollment	16	$1,175	$383	16	$284	$143	16	$298	$137
Based on School's Poverty Ranking and Number of Low-achieving Students	23	$1,151	$384	23	$404	$222	23	$419	$226
Based on School's Percentage of Low-income Students in the District	7	$1,210	$294	7	$439	$350	7	$437	$343
Based on School's Number of Low-achieving Students	31	$1,020	$436	29*	$479	$284	29*	$437	$284
Other-CE Schools	56	$1,126	$403	NA			27**	$468	$315
Non-CE Schools	29	$1,188	$403	NA			NA		
Total – All Schools	242	$1,180	$466	154*	$416	$253	181	$422	$262

*Valid compensatory expenditure data were not available for three of the 157 Title I schools.

**Due to the non-categorical (and thus often ambiguous) nature of other CE funds, there were considerable difficulties for the school coordinator to correctly identify the funding source when recording students' CE selection status. Consequently, there were no valid CE expenditure data provided by the district's business managers for 29 schools that reported having students selected to receive compensatory services under Other CE funds.

Table 7-2

Title I Expenditures for and Number of Students Served in Non-Public Schools by Size of District, for 98 Districts Participating in Title I

District Size (ADA)	Non-Public Schools Title I Expenditures			Number of Title I Students in Non-Public Schools		
	Mean	S.D.	N	Mean	S.D.	N
Small (55 – 10,000)	$ 15,586	23,222	39	49	65	39
Medium (10,000 – 20,000)	$ 35,248	45,696	25	92	94	25
Large (20,000 or more)	$317,913	578,592	34	732	1,170	34
All Districts	$125,491	366,814	98	297	756	98

CHAPTER 8. STUDENT-SELECTION PROCEDURES FOR CE

Methods of allocating funds and determining per-pupil expenditures are only one aspect of the delivery of educational services. Another critical aspect is the determination of *who* receives the services. When we consider CE services that come through or from the district, we must be concerned with how schools are selected to participate, how students are selected within those schools, and, for Title I services, how students in *non-public* schools are selected. This chapter addresses those issues of selection procedures for receipt of CE services.

Selection Procedures Used by the District

Once a district receives Title I funds, it generally adopts and implements criteria for the determination of school eligibility and the allocation of funds to eligible schools and students. The Title I legislation and regulations are flexible on these points, allowing, within limits, local determinations to be made. It is, therefore, of interest to examine how the selection criteria vary as a function of district size, gauged by the number of schools in the district, and district poverty, gauged by the superintendent's estimate of the percentage of students meeting Title I poverty criteria.

School Eligibility. The districts in the Representative Sample that participate in Title I were asked to indicate the measures they use to determine the eligibility of public schools for the program. The percentages of districts that reported the use of each of the five criteria listed are presented in Table 8-1, by size, and poverty of district. The most frequently cited criteria, as indicated by 74 and 57 percent of the districts, respectively, (see the bottom section of the Total column) were counts of recipients of free or reduced-price lunches and AFDC enrollments. Counts of recipients of free or reduced-price breakfasts was the least frequently used criterion, as reported by only 13 percent of the districts. Further examination of Table 8-1 shows that large districts reported the use of AFDC enrollment as a criterion more often than the average, while small districts are more likely to use census data on family income. Districts with higher percentages of poverty students use free or reduced-price lunch counts as a criterion more often than districts with lower concentrations of poverty. The low-poverty districts have a greater tendency to use AFDC enrollment and number of neglected or delinquent children.

While Table 8-1 enables the reader to determine the percentage of districts that adopt each of the five criteria listed, information pertaining to the districts' use of various combinations of these criteria is not readily available from this table. Indeed, most districts use more than one measure, with the average number of criteria cited by a district being two. The most frequently used criteria, either alone or in combination are: free or reduced-price lunch counts alone (22 percent), AFDC enrollment alone (15 percent), and free or reduced-price lunch counts combined with AFDC enrollment (14 percent). The remaining 49 percent of the districts reported using other combinations of criteria with no single combination being used by more than 6 percent of the districts. In summary, free or reduced-price lunch counts, and AFDC enrollment are used most often by the districts, either alone or in combination with other measures, for the determination of Title I eligibility of public schools.

Table 8-1

District Determination of Title I Eligibility of Public Schools by the Poverty Concentration and Size of 212 Districts Participating in Title I*

	Size of Participating District			
Percentage of Students Meeting Title I Poverty Criteria	1-4 Schools	5-16 Schools	17 or more Schools	Total
1-13%				
Census data on family income	56%	20%	30%	33%
AFDC enrollment	56%	64%	65%	63%
Free or reduced-price breakfast count	13%	8%	13%	11%
Free or reduced-price lunch count	63%	68%	74%	69%
No. neglected or delinquent children	31%	28%	22%	27%
(Number of districts)	(16)*	(25)	(23)	(64)
14-25%				
Census data on family income	48%	24%	41%	37%
AFDC enrollment	52%	48%	48%	49%
Free or reduced-price breakfast count	9%	8%	11%	9%
Free or reduced-price lunch count	70%	76%	67%	71%
No. neglected or delinquent children	22%	16%	7%	15%
(Number of districts)	(23)	(25)	(27)	(75)
26-100%				
Census data on family income	42%	30%	42%	37%
AFDC enrollment	53%	53%	71%	59%
Free or reduced-price breakfast count	42%	13%	4%	18%
Free or reduced-price lunch count	89%	87%	67%	81%
No. neglected or delinquent children	32%	10%	29%	22%
(Number of districts)	(19)	(30)	(24)	(73)
Total				
Census data on family income	48%	25%	38%	36%
AFDC enrollment	53%	55%	61%	57%
Free or reduced-price breakfast count	21%	10%	9%	13%
Free or reduced-price lunch count	74%	77%	69%	74%
No. neglected or delinquent children	28%	17%	19%	21%
(Number of districts)	(58)	(80)	(74)	(212)

*Two Title I districts did not respond to the question on Title I eligibility criteria.

Student Eligibility. More than half of the Title I districts (53 percent) select students to receive Title I services primarily through standardized achievement tests. Selection through an equal weighting of test scores and teacher judgment was reported by 44 percent of the districts. Locally developed tests, and teacher judgment alone are seldom used as primary criteria for student selection. Table 8-2 presents the frequency distribution of the usage of the four criteria listed by the poverty concentration and size of district. Almost two-thirds (64%) of the large districts indicated standardized achievement tests as the primary criterion for Title I student selection, while the small districts are nearly evenly split between the use of standardized tests alone and such tests plus teacher judgment. Inspection of the table also shows a tendency for the small and medium districts (less than 17 schools), with low poverty concentrations (less than 14%), to use an equal weighting of tests and teacher judgment as the major selection criterion more often than other types of districts.

CE Selection Criteria Used by Title I Schools

Six different criteria are used by Title I schools in various combinations to select students for participation in CE. Table 8-3 lists the major combinations of selection criteria showing the numbers and percentages of 'needy' students in the Representative Sample associated with each combination. 'Needy' students are those judged by their teachers as currently requiring reading and/or math compensatory services. Approximately 40 percent of all the students in the sampled Title I schools were judged by their teachers as 'needy'.

Although it cannot be seen in the table, test results are used as part of the selection process in almost every combination of procedures, and are instrumental in the selection of 96.3 percent of the needy students. Teacher recommendations occur primarily in combination with other procedures (67.9% of the needy students selected), as does target-group membership, e.g., economically disadvantaged, which enters into combinations used in the selection of 36.5 percent of the needy students.

A notably high percentage and number of needy students are selected when target groups and test results are used as joint selection criteria. However, the percentage of 'non-needy' students (students judged by teachers to be not in need of compensatory services) selected by this combination is a relatively high 9.8 percent. On the other hand, when target groups, test results, teacher recommendations, volunteers, and parent requests are used in various combinations as criteria, the percentage of needy students selected drops noticeably. This suggests that the effect of using target groups is quite complex, varying in its impact depending on what other factors (or motivations) enter into the selection process.

Table 8-4 shows the mean economic status (ES), expressed as a percentage of the Orshansky poverty cut-off, and the mean debiased basic-skills achievement percentile scores (BSS) for students by the categories of criteria their schools use in selection of CE participants and the students' category of receipt of Title I services. As may be expected, students who are selected to receive Title I services always have lower economic and achievement status than those not selected, regardless of the method their schools use. Comparisons of economic-status and achievement means between students who are and students who are not selected to receive Title I services indicate that where parent-request and volunteer methods are used,

Table 8-2

District Title I Selection Policy by Poverty Concentration and Size*

Size of District		District Method of Determining Eligibility of Student for Title I			
Percentage of District Students Meeting Title I Poverty Criteria		Standardized Achievement Tests	Locally Developed Achievement Tests	Teacher Judgments	Equal Weighting of Achievement Tests and Teacher Judgment
1-4 Schools					
1-13% poverty	(N=18)	39%	0%	5%	56%
14-25% poverty	(N=23)	48%	0%	0%	52%
26-100% poverty	(N=18)**	56%	0%	5%	39%
Subtotal	(N=59)	48%	0%	3%	49%
5-16 Schools					
1-13% poverty	(N=25)	44%	0%	0%	56%
14-25% poverty	(N=25)	52%	0%	8%	40%
26-100% poverty	(N=30)	50%	0%	0%	50%
Subtotal	(N=80)	49%	0%	2%	49%
17 or more Schools					
1-13% poverty	(N=23)	57%	0%	4%	39%
14-25% poverty	(N=27)	67%	0%	0%	33%
26-100% poverty	(N=24)	67%	4%	0%	29%
Subtotal	(N=74)	64%	1%	1%	34%
Total					
1-13% poverty	(N=66)	47%	0%	3%	50%
14-25% poverty	(N=75)	56%	0%	3%	41%
26-100% poverty	(N=72)	57%	1%	2%	40%
Subtotal	(N=213)	53%	1%	2%	44%

*Data were available on only 213 participating districts.

**Data were not available from one Title I district.

Table 8-3

Criteria Used by Title I Schools for Selection of CE Participants, and Selection Rates for 'Needy' and 'Non-Needy' Students*

School Selection Criteria	Number of 'Needy' Students in Sample	Percentage of 'Needy' Students in Sample	Percentage of 'Needy' Students Selected	Percentage of 'Non-Needy' Students Selected
Test results alone	3,666	18.1%	51.3%	6.6%
Test results and teacher recommendation	4,490	22.1%	48.9%	4.3%
Some combination of test results, teacher recommendation, volunteer, and/or parent request	3,976	19.6%	47.3%	3.2%
Teacher recommendation alone or combined with parent request and/or volunteer	184	0.9%	49.5%	5.1%
Membership in one or more target groups only, or in combination with test results	2,263	11.1%	59.2%	9.8%
Target groups, test results, and teacher recommendation	3,199	15.8%	43.0%	6.6%
Some combination of target groups, test results, teacher recommendation, volunteer, and parent request	1,936	9.6%	40.1%	3.1%
All students in the ** school participate	576	2.8%	(29.0%)	(2.7%)
Total	20,290	100.0%	47.8%	4.9%

*'Needy' and 'Non-Needy' students are defined in terms of teacher's judgment of student's need for CE services.

**Some principals reported that all students in their school participate in CE programs. However, the records of the Compensatory Education Roster (CER) do not indicate that all students in these schools are selected for Title I services.

Table 8-4

Criteria Used by Title I Schools for the Selection of Students for CE Services, and Differences in the Economic Status and Achievement Status of Title I and Non-Title I Students*

Criteria Used by Title I Schools to Select CE Students		Students Selected to Receive Title I			Students Not Selected to Receive Title I		
		Mean	S.D.	N	Mean	S.D.	N
Test results alone	ES*	159.7	75.5	2,173	206.2	88.3	5,936
	BSS	25.0	18.9	2,070	50.7	28.6	5,631
Test results and teacher recommendation	ES	193.0	85.7	2,557	247.7	82.6	10,287
	BSS	27.6	20.6	2,459	55.2	27.5	9,939
A combination of test results, teacher recommendation, volunteer, and/or parent request	ES	187.1	85.8	2,119	235.5	84.4	9,274
	BSS	27.6	19.9	2,030	53.3	27.8	8,913
Teacher recommendation alone or in combination with parent request and/or volunteer	ES	183.5	87.6	107	218.9	76.8	389
	BSS	28.5	21.6	102	46.5	25.3	371
Target groups only or in combination with test results	ES	155.8	71.2	1,521	198.3	83.9	2,581
	BSS	25.1	19.5	1,521	45.7	28.3	2,521
A combination of target groups, test results, and teacher recommendation	ES	164.9	82.3	1,635	204.5	95.4	5,489
	BSS	25.8	21.0	1,601	45.8	28.4	5,351
A combination of target groups, test results, teacher recommendation, parent request, and/or volunteer	ES	161.4	70.0	843	196.8	82.7	3,199
	BSS	27.5	19.4	765	45.7	27.4	3,095
All students in the ** school participate	ES	206.7	76.9	195	(239.5)	(71.0)	(1,421)
	BSS	28.9	18.2	188	(46.1)	(27.4)	(1,383)
Total	ES	174.0	81.6	11,150	224.1	87.8	38,576
	BSS	26.5	20.0	10,736	50.9	28.2	37,204

*ES = economic status as a percentage of the poverty cut-off; BSS = percentile ranks for debiased basic skill achievement scores.

**Some principals reported that all students in their school participate in CE programs. However, the records of Compensatory Education Roster (CER) do not indicate that all students in these schools are selected for Title I services.

not accompanied by test results, differences are the smallest. Differences are largest when test results are used with teacher recommendations. Where principals reported that all students in the school participate, Title I selectees have both the highest economic and achievement status. Target group membership appears to be employed in schools with the lowest average economic and achievement status.

Selection of Students for Title I Services in Relation to District Allocation Procedures

Federal guidelines pertaining to student eligibility for Title I are sufficiently flexible to allow districts to formulate their own fund-allocation procedures. Table 8-5 presents six different procedures that are used in the allocation of Title I funds to schools, along with the average percentages of low-achieving and low-income students in the schools receiving Title I services. The data show that the percentages of both low-achieving and poor students selected for

Table 8-5

District Title I Allocation Procedures for Title I Schools and Percentages of Low-Achieving and Poor Students Selected for Title I Services

District Allocation Procedure	Percentage of Low-Achieving Students Selected			Percentage of Poor Students Selected		
	Mean	S.D.	N	Mean	S.D.	N*
District-level project	26.1	13.0	57	34.1	18.9	50
Based on equal funding	21.1	13.6	23	25.3	25.1	22
Based on school's total enrollment	26.3	10.1	16	33.2	20.0	15
Based on school's poverty ranking and number of low-achieving students	25.5	9.0	23	35.6	18.4	23
Based on school's percentage of low-income students in the district	29.2	13.6	7	48.4	26.9	7
Based on school's number of low-achieving students	26.3	15.9	31	45.1	30.0	31
Total	25.5	12.9	157	35.9	23.6	148

*Numbers of schools contributing to the percentages of poor students are slightly less than those contributing to percentages of low-achieving students because some Title I schools have no poor students.

Title I services tend to be highest when allocation is based on the school's percentage of low-income students in the district. However, only seven Title I schools in the sample are associated with districts employing such a procedure. The average percentage of low-income students selected in schools where the districts' Title I allocation is based on the number of low-achieving students in the school is also quite high (45.1%). This may be partially due to the considerable correlation between achievement and economic status. The percentages of low-achieving and low-income students selected for Title I services tend to be lowest in schools where the district allocation procedure is 'equal funding' for all participating schools.

Selection of Students in Non-Public Schools for Title I Services and Allocation of Funds

An important problem in program administration by Title I school districts could be expected to result from different CE methods and procedures used in non-public school programs serving students residing within the district boundary. Among the procedures described here are the application of criteria for student selection, the allocation of funds to services, and differences in Title I emphasis by grade.

Selection of Students in Non-Public Schools. Table 8-6 displays the frequency of the use of various procedures by Title I districts in the selection of non-public school students for Title I services. A large percentage of districts (65.3%) reported selection primarily through standardized achievement tests. Almost a third (32.7%) of the districts consider an equal weighting of teacher judgment and test results as the primary criteria. Compared to the district selection policy in the public schools (see Table 8-2), standardized achievement tests are used more often as primary criteria for Title I selection of students in non-public schools.

Table 8-6

Selection Procedures for Non-Public School Students in 98 Title I Districts

Selection Procedure*	Number of Districts Employing Procedure	Percentage of Districts Employing Procedure
Standardized achievement tests	64	65.3%
Equal weighting of both achievement tests and teacher judgment	32	32.7%
Teacher judgment	7	7.1%
Locally-developed achievement tests	3	3.1%

*Districts may report more than one criteria being used.

Allocation of Funds to Services. Table 8-7 presents the percentages of districts that allocate Title I funds to each of the six listed services extended to the non-public school students. The most commonly funded service is the purchase of instructional materials, for which 83.7 percent of the 98 districts provided Title I funds. In contrast, only 17.3 percent of the districts reported spending Title I funds for salaries of instructional personnel during non-regular school hours. This finding is consistent with the data presented in Table 3-31 that indicated that few districts delivered Title I services to non-public school students outside the normal school day. From these data it appears that Title I districts, according to the intent of the Title I program, provide a comprehensive array of services to non-public school students.

Grade Allocation. Table 8-8 gives the percentages of districts offering Title I services to non-public school students by grade. Districts allocate Title I funds more frequently to students in the lower grades of non-public schools, particularly grades two and three, than to students in grades five or six.

School Characteristics and Selection Rate of Regular-Achieving Students

The issue of 'effective-targeting' of CE services has been addressed in an earlier section by looking at the selection rates for low-achieving students. This section further examines the issue in terms of selection rates for regular-achieving students. For descriptive purposes, the CE schools are divided into four groups based on their percentage of regular-achieving students selected for CE services. The differences in eight school characteristics among these groups are examined in Tables 8-9 and 8-10. In the later parts of this section, the selection rates of regular-achieving students are compared by school's grade span, urbanism, and geographic region.

It may be noted that about 54 percent of the 213 CE schools have 10 percent or less of their regular achievers in reading selected to receive reading CE services, while 70 percent of the CE schools fall into this category when math CE services are considered. Only a relatively small percentage of schools have 41 percent or more of their regular achievers selected for CE services – about 10 percent for reading and 8 percent for math.

Characteristics of Schools with Various Percentages of Regular Achievers (Reading) Selected for CE Reading Services. Table 8-9 describes the characteristics of schools by schools' CE selection rate for regular achieving reading students. As judged by Scheffe's multiple comparison tests, at the .05 level, the four groups of schools differ significantly in the following ways:

- The extent of parent/community involvement is higher in schools with 41 percent or more of regular achievers selected for reading CE than in those with 10 percent or less.

- The average percentage of minority students in schools with 21 percent or more of their regular achievers selected for reading CE is more than twice that in schools with 20 percent or less.

Table 8-7

Allocation of Title I Funds to Services for Non-Public School Students by 98 Title I Districts

Service Funded by Allocation	Number of Districts Allocating to Service	Percentage of Districts Allocating to Service
Instructional materials	82	83.7%
Testing materials	70	71.4%
Salaries of public school teachers	61	62.2%
Inservice training to instructional personnel	59	60.2%
Equipment	56	57.1%
Salaries of teaching assistants or aides	55	56.1%
Salaries of instructional personnel during non-regular school hours	17	17.3%

Table 8-8

Allocation of Title I Funds by 98 Title I Districts to Students in Non-Public Schools, by Grade

Grade	Number of Districts	Percentage of Districts
1	82	83.7%
2	89	90.8%
3	90	91.8%
4	86	87.8%
5	80	81.6%
6	77	78.6%
Other grades only	2	2.0%

Table 8-9

School Characteristics for Schools with Various Percentages of Regular-Achieving Students Receiving CE Reading Services

School Characteristics		Percentage of Regular Achievers Receiving CE Reading Services				
		0-10%	11-20%	21-40%	41-100%	Total
Number of elementary schools in associated districts	Mean	19.9	13.6	45.3	41.4	23.6
	S.D.	25.8	21.7	105.5	94.3	52.4
	N	116	50	26	21	213
District's percentage of poverty students	Mean	22.8	26.4	32.2	30.0	25.5
	S.D.	19.1	15.6	20.8	15.3	18.4
	N	116	50	26	21	213
School enrollment in grades 1-6	Mean	334.1	320.1	287.3	320.3	323.7
	S.D.	163.4	226.2	151.5	217.5	183.6
	N	116	50	26	21	213
Parent/ community involvement	Mean	39.8	42.4	40.7	51.7	41.7
	S.D.	12.1	16.1	13.4	20.1	14.5
	N	116	50	26	21	213
School's percentage of minority students	Mean	17.7	18.7	40.2	45.9	23.5
	S.D.	24.4	30.1	38.9	39.3	31.1
	N	116	50	26	21	213
School's percentage of poverty students	Mean	8.6	13.6	22.8	21.4	12.8
	S.D.	9.3	15.6	23.3	24.5	15.9
	N	116	50	26	21	213
Current per-pupil expenditures	Mean	$1,165	$1,238	$1,172	$1,125	$1,179
	S.D.	$515	$459	$394	$374	$475
	N	116	50	26	21	213
Per-participant* CE expenditure	Mean	$346	$351	$354	$251	$339
	S.D	$274	$213	$206	$151	$241
	N	94	48	25	19	186**

*The school's per-participant expenditures were obtained by dividing the reported total CE expenditures by the reported number of participants.

**Valid expenditure data were not available for 27 CE schools.

- The poverty concentration is much higher in schools that select 21 percent or more of their regular reading achievers to receive CE, compared to those schools with 10 percent or less regular achieving reading CE students.

One possible explanation of the last two findings is that schools with a high concentration of poverty may consider student economic status in their selection process, and that the poverty and minority concentrations are positively correlated.

Characteristics of Schools with Various Percentages of Regular Achievers (Math) Selected for CE Math Services. The findings for math, as presented in Table 8-10, are similar to those for reading. Again, Scheffe's multiple comparison tests were employed to detect the differences among the four groups of CE schools:

- Schools with small percentages (0-10%) of regular-achieving math CE selectees are in districts with lower poverty concentrations than schools with moderate percentages (11-40%). In terms of within-school poverty concentrations, a similar pattern emerges.

- Compared to schools with moderate or high percentages, schools with small percentages (0-10%) of regular-achieving math CE selectees have a lower concentration of minority students.

The results can probably be explained by similar reasons discussed earlier for reading.

School Grade Span and Percentage of Regular Achievers Who Are Selected For CE Reading or CE Math Services. Table 8-11 displays the percentages of schools that have 0-10%, 11-20%, 21-40%, and 41-100% of regular-achieving students selected to receive CE services by their grade span. The CE schools are classified based on the grades they operate as either full-range elementary, elementary-feeder, primary or intermediate and middle grade schools. Although the majority (70 percent) of the schools are full-range elementary schools, it is of interest to note that the intermediate and middle grade schools are less likely to have their regular achieving students selected for CE services, compared to the other three types of grade schools. Among the intermediate and middle grade schools, 82.6 and 78.3 percent have 10 percent or less of their regular-achieving students selected to receive reading and math CE services, respectively.

Geographic Region and Urbanism of Schools and Percentage of Regular Achievers Who Are Selected to Receive CE Services. Tables 8-12 and 8-13 present the frequency distributions of schools in the four categories of school percentage of regular-achieving students who are CE selectees, by geographic region and urbanism of schools. Inspection of Table 8-12 reveals that nearly half (47.4 percent) of the Pacific Southwest schools have 41 percent or more of their regular-achieving students selected to receive CE services. In contrast, most schools in the midwest, central and southeast regions selected 10 percent or less of their regular-achieving students for the receipt of CE services. Although the data are not weighted and are based on small samples, the results indicate that schools in the midwest and central regions are less likely to select regular students for CE services than the Pacific Southwest. With respect to school urbanism, small cities (under 50,000) are extremely unlikely (0 percent in the study sampie) to have a high percentage (41 percent or more) of regular achievers who are CE selectees.

Table 8-10

School Characteristics for Schools with Various Percentages of Regular-Achieving Students Receiving CE Math Services

School Characteristics		Percentage of Regular Achievers Receiving CE Math Services 0-10%	11-20%	21-40%	41-100%	Total
Number of elementary schools in district	Mean	21.4	27.8	16.2	41.4	23.6
	S.D.	48.2	40.4	16.3	102.5	52.4
	N	149	30	16	18	213
Percentage of poverty students in school's district	Mean	22.2	34.4	37.3	27.6	25.5
	S.D.	16.4	20.3	25.2	15.4	18.4
	N	149	30	16	18	213
School enrollment in grades 1-6	Mean	330.5	312.4	289.6	316.6	323.7
	S.D.	185.5	152.5	173.8	229.4	183.6
	N	149	30	16	18	213
Parent/ community involvement	Mean	40.3	42.9	44.9	48.3	41.7
	S.D.	13.2	14.4	18.7	19.1	14.5
	N	149	30	16	18	213
School's percentage of minority students	Mean	16.4	33.2	42.3	48.7	23.5
	S.D.	23.9	38.8	38.0	39.9	31.1
	N	149	30	16	18	213
School's percentage of poverty students	Mean	9.5	17.0	28.9	18.5	12.8
	S.D.	11.1	20.0	25.5	20.8	15.9
	N	149	30	16	18	213
Current per-pupil expenditures	Mean	$1,186	$1,157	$1,256	$1,089	$1,179
	S.D.	$505	$411	$427	$351	$475
	N	149	30	16	18	213
Per-participant* CE expenditure	Mean	$364	$285	$327	$248	$339
	S.D.	$268	$167	$151	$160	$241
	N	126	29	16	15	186**

*The school's per-participant expenditures were obtained by dividing the reported total CE expenditures by the reported number of participants.

**Valid expenditure data were not available for 27 CE schools.

Table 8-11

School Grade Span and Percentage of Regular-Achieving Students Who Receive CE Reading or CE Math Services

Percentage of Regular Achievers Who Receive CE Services	Full Range Elementary		Elementary Feeder		Primary		Intermediate and Middle	
	N	%	N	%	N	%	N	%
CE reading services								
0-10 percent	77	51.7	11	45.8	9	52.9	19	82.6
11-20 percent	40	26.8	5	20.8	2	11.8	3	13.0
21-40 percent	17	11.4	4	16.7	4	23.5	1	4.3
41-100 percent	15	10.1	4	16.7	2	11.8	0	0.0
Total:	149	100.0	24	100.0	17	100.0	23	99.9*
CE math services								
0-10 percent	101	67.8	19	79.2	11	64.7	18	78.3
11-20 percent	23	15.4	1	4.2	3	17.6	3	13.0
21-40 percent	12	8.1	2	8.3	1	5.9	1	4.3
41-100 percent	13	8.7	2	8.3	2	11.8	1	4.3
Total:	149	100.0	24	100.0	17	100.0	23	99.9*

*Discrepancies due to rounding errors.

In closing, it may also be remarked that, as gauged by the 'mis-targeting' rate in the schools, math CE services appear to be directed to the low-achieving students more effectively than reading CE services.

Table 8-12

Geographic Region of Schools and Percentage of Regular-Achieving Students Who Receive CE Reading or Math Service

	Percentage of Regular Achievers Receiving CE Services									
	0-10%		11-20%		21-40%		41-100%		Total	
Geographic Region	N	%	N	%	N	%	N	%	N	%
New England										
Reading	10	47.6	6	28.6	3	14.3	2	9.5	21	100.0
Math	21	100.0	0	0.0	0	0.0	0	0.0	21	100.0
Metropolitan Northeast										
Reading	10	43.5	7	30.4	4	17.4	2	8.7	23	100.0
Math	14	60.9	5	21.7	3	13.0	1	4.3	23	99.9*
Mid-Atlantic										
Reading	9	39.1	7	30.4	5	21.7	2	8.7	23	99.9*
Math	14	60.9	4	17.4	3	13.0	2	8.7	23	100.0
Southeast										
Reading	14	63.6	4	18.2	3	13.6	1	4.5	22	99.9*
Math	16	72.7	2	9.1	3	13.6	1	4.5	22	99.9*
North Midwest										
Reading	17	68.0	6	24.0	1	4.0	1	4.0	25	100.0
Math	18	72.0	4	16.0	1	4.0	2	8.0	25	100.0
South Central										
Reading	16	69.6	3	13.0	2	8.7	2	8.7	23	100.0
Math	17	73.9	4	17.4	0	0.0	2	8.7	23	100.0
Central Midwest										
Reading	13	59.1	4	18.2	3	13.6	2	9.1	22	100.0
Math	14	63.6	5	22.7	2	9.1	1	4.5	22	99.9*
North Central										
Reading	12	60.0	7	35.0	1	5.0	0	0.0	20	100.0
Math	17	85.0	2	10.0	1	5.0	0	0.0	20	100.0
Pacific Southwest										
Reading	7	36.8	1	5.3	2	10.5	9	47.4	19	100.0
Math	6	31.6	2	10.5	2	10.5	9	47.4	19	100.0
Pacific Northwest										
Reading	8	53.3	5	33.3	2	13.3	0	0.0	15	99.9*
Math	12	80.0	2	13.3	1	6.7	0	0.0	15	100.0

*Discrepancies due to rounding errors.

Table 8-13

Urbanism of Schools and Percentages of Regular-Achieving Students Who Receive CE Reading or Math Services

	Percentage of Regular Achievers Receiving CE Services									
	0-10%		11-20%		21-40%		41-100%		Total	
Urbanism	N	%	N	%	N	%	N	%	N	%
City over 500,000										
Reading	5	38.5	2	15.4	4	30.8	2	15.4	13	100.1*
Math	5	38.5	5	38.5	1	7.7	2	15.4	13	100.1*
City of 200,000 – 500,000										
Reading	6	54.5	3	27.3	0	0.0	2	18.2	11	100.0
Math	6	54.5	2	18.2	2	18.2	1	9.1	11	100.0
City of 50,000 – 200,000										
Reading	18	69.2	2	7.7	3	11.5	3	11.5	26	99.9*
Math	23	88.5	1	3.8	1	3.8	1	3.8	26	99.9*
Suburb of city										
Reading	23	85.2	0	0.0	1	3.7	3	11.1	27	100.0
Math	22	81.5	1	3.7	1	3.7	3	11.1	27	100.0
City under 50,000										
Reading	28	48.3	23	39.7	7	12.1	0	0.0	58	100.1*
Math	46	79.3	9	15.5	3	5.2	0	0.0	58	100.0
Rural area near city										
Reading	14	58.3	4	16.7	3	12.5	3	12.5	24	100.0
Math	16	66.7	3	12.5	2	8.3	3	12.5	24	100.0
Rural area not near city										
Reading	22	40.7	16	29.6	8	14.8	8	14.8	54	99.9*
Math	31	57.4	9	16.7	6	11.1	8	14.8	54	100.0

*Discrepancies due to rounding errors.

PART IV. DISTRICT, SCHOOL, AND PARENT/COMMUNITY PARTICIPATION IN COMPENSATORY-EDUCATION PROGRAMS

CHAPTER 9. DISTRICT CHARACTERISTICS AND CE

The focus of this chapter is on the relationship between district characteristics and the nature and extent of their CE programs. Due to the emphases and requirements of CE programs, specifically Title I, participation may influence a district's organizational and administrative structure. The first section of this chapter examines the differences in organizational characteristics between those districts participating in Title I and those with no Title I program. While participation in Title I may induce changes in a district organization and its educational policy, the relationship between district characteristics and its program implementation is not uni-directional. Since districts play an important role in Title I program implementation, particularly in the allocation of funds to schools, characteristics of the district, e.g., district's poverty concentration, can be expected to affect the nature of its Title I program. The later sections of this chapter describe Title I program characteristics in relation to the characteristics of the district.

District Characteristics and Participation in Title I

This section looks into the differences in organizational characteristics between Title I and Non-Title I districts. Three major areas are discussed: performance reviews of the staff, teacher contract issues, and the emphases of various educational approaches. However, as a testimony to the near universality of Title I in our national education efforts, the Representative Sample of 219 districts contains only five districts not participating in Title I. Therefore, general conclusions regarding the differences between participating and non-participating districts cannot be made with confidence.

Performance Reviews of Teachers and Principals. Title I encourages the further development of skills for those individuals delivering CE services. Because district-wide procedures for performance reviews would be expected to be an indirect result of such encouragement, the district practice of performance reviews was examined. Table 9-1 presents the frequency distributions of the use of the four review procedures by participating and non-participating districts for teachers and for principals. All districts, Title I or non-Title I, make some use of the results of performance reviews when they are conducted. Only 4 districts in our sample reported that no reviews were conducted for teachers, while 29 of the 219 districts reported no performance reviews for principals. The results also suggest that Title I districts place a greater emphasis on the use of performance reviews for constructive feedback to teachers and principals.

Teacher Contract Issues. Table 9-2 presents the percentages of districts whose elementary-school teacher contracts cover each of the six issues. Participating and non-participating Title I districts appear to be very similar with respect to the issues addressed in their contracts. Neither type of district is more likely to negotiate contracts that specifically concern instructional issues.

Table 9-1

Use of District Performance Reviews for Non-Probationary Teachers and Principals by Title I and Non-Title I Districts

Use of Performance Reviews	District CE Receipt Category					
	Title I (N=214)		Non-Title I (N=5)		Total (N=219)	
	Number	Percent	Number	Percent	Number	Percent
Teacher Reviews						
No review conducted	4	1.9%	0	0.0%	4	1.8%
Review results not used	0	0.0%	0	0.0%	0	0.0%
Promotional consideration	1	0.5%	0	0.0%	1	0.5%
Performance feedback	43	20.0%	2	40.0%	45	20.5%
Constructive feedback	166	77.6%	3	60.0%	169	77.2%
Total	214	100.0%	5	100.0%	219	100.0%
Principal Reviews						
No review conducted	27	12.6%	2	40.0%	29	13.2%
Review results not used	0	0.0%	0	0.0%	0	0.0%
Promotional consideration	1	0.5%	0	0.0%	1	0.5%
Performance feedback	47	22.0%	2	40.0%	49	22.4%
Constructive feedback	139	64.9%	1	20.0%	140	63.9%
Total	214	100.0%	5	100.0%	219	100.0%

Table 9-2

Incidence of Teacher Contract Issues by Title I and Non-Title Districts

Elementary School Teacher Contract Issues	District CE Receipt Category					
	Title I (N=214)		Non-Title I (N=5)		Total (N=219)	
	Number	Percent	Number	Percent	Number	Percent
District has no contract with teacher organization	76	36%	2	40%	78	36%
Participation in selection of classroom material	45	21%	1	20%	46	21%
Preparation time during normal school hours	78	36%	2	40%	80	37%
Participation in budgeting	20	9%	1	20%	21	10%
Participation in program planning and evaluation	48	22%	2	40%	50	23%
Participation in staffing and class-size decisions	55	26%	0	0%	55	25%
Contract that does not address above issues	43	20%	1	20%	44	20%

Educational Approaches Used. Table 9-3 provides average percentages of schools that emphasize one or more of the ten educational approaches listed. The most frequently used educational approach for both participating and non-participating districts is a concentration on basic skills. The Title I districts are much more likely to have early-childhood education programs and to implement diagnostic-prescriptive instructions. From the percentages it appears that many of the schools are emphasizing several of the approaches.

General Characteristics. Table 9-4 displays, for both participating and non-participating districts, six program characteristics that could be related to participation status. Participating and non-participating districts differ in two areas: the district's average daily attendance (ADA), indicating that non-Title I districts have smaller enrollments; and the average district percentage of students below the poverty level, with Title I districts reporting an average percentage more than twice that of non-Title I districts. It also appears that districts participating in Title I have district-wide testings less frequently, even though the opposite might be expected as a result of their need to distribute Title I services to students on the basis of educational need. The Title I districts may have school-level testings or may prefer other allowable selection procedures for students. Participating districts also exert more control over educational programs, but they appear to do so without building a top-heavy administrative bureaucracy. While most of the differences are in the direction expected, the findings must still be viewed with consideration of the small number of non-participating districts.

Qualified Districts that Fail to Receive Title I Support

Because almost all of the sampled districts (97.7%) indicated that they participate in Title I, the number of sampled non-participating districts is inadequate to provide information on why qualified districts fail to receive Title I funds. Nevertheless, it may be seen from Table 9-5 that four of the five non-participating districts are districts with low percentages of poor students. The only non-participating district with a high concentration of poverty reported non-participation as due to district choice. From these data it follows that few if any districts are likely to qualify for and want to participate in Title I, but fail to do so.

Title I Program Characteristics of Participating Districts

In this section the characteristics of the district Title I programs are considered along with how those characteristics differ among the three groups of districts classified on the basis of their concentration of students meeting Title I poverty criteria.

Allocation of Funds. Table 9-6 shows that the majority of districts at all three poverty levels allocate their Title I funds to district-operated projects. Although this item was intended to refer to district-wide centers or projects not specific to individual schools, we feel that many of the superintendents interpreted it to include projects that are planned, organized, and controlled by the district even though they are somewhat independent at various schools. There is a somewhat greater tendency for the low poverty districts to allocate their Title I funds to individual school projects and to groups of schools having similar projects. A large proportion of districts receive no CE funds other than from Title I (43.7%). This figure drops slightly to 38.9 percent for the high-poverty districts. Table 9-6 also describes the rank usually held by the district Title I director. Of all districts, 70.4 percent assign a special

Table 9-3

Average Percentage of Schools Emphasizing Educational Approaches in Title I and Non-Title I Districts

	District CE Receipt Category					
	Title I (N=214)		Non-Title I (N=5)		Total (N=219)	
Educational Approach Emphasized By Schools	Mean	S.D.	Mean	S.D.	Mean	S.D.
Combined grades and/or ungraded classes	41.3	39.8	60.0	54.8	41.7	40.2
Diagnostic-prescriptive instruction	64.3	43.0	40.0	54.8	63.8	43.3
Concentration on basic skills	88.5	29.0	100.0	0.0	88.7	28.7
Classroom management systems	26.1	39.2	20.0	44.7	26.0	39.2
"Open" classroom instructional approaches	15.8	25.3	20.0	44.7	15.9	25.8
Tutoring	45.4	43.5	26.6	43.4	44.9	43.5
Parent involvement in classroom	46.6	42.8	20.0	44.7	46.0	42.9
Early childhood education	38.1	41.2	0.0	0.0	37.2	41.2
Remedial reading specialists	66.6	39.2	50.0	50.0	66.3	39.4
Team teaching	25.4	32.4	20.0	44.7	25.3	32.6

Table 9-4

General Characteristics of Title I and Non-Title I Districts

District Characteristic	District CE Receipt Category					
	Title I (N=214)		Non-Title I (N=5)		Total (N=219)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Overall testing frequency (3=annually; 0=never)	2.43	0.81	3.00	0.00	2.44	0.80
Control of school program (index ranges from 0 to 8)	5.04	1.87	3.60	2.30	5.01	1.88
Frequency of performance reviews per year (index ranges from 0 to 15)	11.24	3.08	13.00	2.45	11.28	3.07
Percentage of students below poverty level	24.36	17.67	9.20	13.72	24.01	17.71
Percentage of staff that is administrative	5.39	3.19	7.80	6.91	5.45	3.31
Enrollment (ADA)	18,283	53,001	1,327	1,356	17,896	52,452

Table 9-5

District Participation and Non-Participation in Title I, by Concentration of Poverty

Percentage of Students Below the Poverty Level	District Participating		District Not Participating							
			Does not qualify		No personnel		Chose not to		Total not Participating	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
1-13%	66	94.3	1	1.4	1	1.4	2	2.9	4	5.7
14-25%	75	100.0	0	0.0	0	0.0	0	0.0	0	0.0
26-100%	73	98.6	0	0.0	0	0.0	1	1.4	1	1.4
Total	214	97.7	1	0.5	1	0.5	3	1.4	5	2.4

Table 9-6

Allocation of Funds and Director's Rank for Participating Districts, by the District's Percentage of Students Meeting Title I Poverty Criteria

(Based on 213 Title I Districts)*

Program Characteristics	Percentage of Students Meeting Title I Poverty Criteria							
	1-13%		14-25%		26-100%		Total	
	N	Percent	N	Percent	N	Percent	N	Percent
Allocation of non-Title I CE funds								
No other CE funds	33	50.0	32	42.7	28	38.9	93	43.7
Primarily to supplement Title I services	12	18.2	9	12.0	11	15.3	32	15.0
Primarily to serve more students	21	31.8	34	45.3	33	45.8	88	41.3
Allocation of Title I funds								
District operated projects**	34	51.5	39	52.0	40	55.6	113	53.1
Individual school projects	10	15.2	5	6.7	7	9.7	22	10.3
Several schools with similar projects	17	25.8	24	32.0	12	16.7	53	24.9
Equal amounts of at least 2 of the above	5	7.6	7	9.3	13	18.1	25	11.7
Rank of district's Title I director								
Superintendent	2	3.0	8	10.7	8	11.1	18	8.5
Assistant/Deputy/Associate/Area Superintendent	17	25.8	9	12.0	6	8.3	32	15.0
Supervisor/Manager/Director/Coordinator	41	62.1	55	73.3	54	75.0	150	70.4
Assistant Principal/Teacher	6	9.1	3	4.0	4	5.6	13	6.1

*Data for one Title I district were unavailable.

**See text for explanation of how this item was interpreted.

title of either supervisor, manager, director, or coordinator to the person responsible for Title I administration in the district. The districts with low-poverty concentrations (less than 14%) tend to use this special designation less often than other districts.

Although no table is presented, the rank of Title I director was also analyzed by district size. Only 44 percent of the small districts (those with four schools or less) designate a special title of supervisor, manager, director, or coordinator to the administrator of Title I program, while over 90 percent of large districts (those with 17 or more schools) use this special title designation. This is likely because it is more economical for the small districts to simply have some existing administrative staff (superintendent, deputy superintendent or assistant principal, etc.) to manage a program of smaller scope. The large districts, on the other hand, have a more complex operating system and possibly also larger Title I programs that necessitate a greater delegation of responsibility.

Additional Program Characteristics. Table 9-7 describes five additional characteristics of Title I programs for participating districts. The first row of the table shows that practically all schools (95.0%), considered eligible for Title I by their districts, are in fact receiving some amount of Title I funds. The second row of the table indicates that an average of one-half of the work day is spent tending to Title I matters by the person acting as Title I coordinator. This proportion increases sharply to about two-thirds of the time for coordinators in high-poverty districts, and decreases to about one-third of the time in the low-poverty districts. The yearly frequency with which districts keep their Title I personnel informed through meetings and publications varies little across poverty levels, with an average of approximately 26 during the year. The average Title I district has participated in the program for 11.2 years. Length of participation does not vary appreciably as a function of district poverty level. Since Title I had been in effect 12 years at the time the district questionnaires were completed, this shows that most districts have participated in the program continuously since its inception. The average expenditure per participant is $392, with the high-poverty districts reporting a slightly larger figure than the average, while the low-poverty districts are slightly lower than the average.

Table 9-8 compares district per-participant CE expenditures by funding sources. These per-participant expenditures were obtained by dividing the reported total district expenditure by the reported number of participants. Estimates obtained in this way are possibly quite inaccurate in some cases despite our diligent quality-control of the data via telephone validation procedures. For instance, the estimates range from $32 to $1,582, $5 to $1,665, $1 to $4,715, and $20 to $6,250 for Title I, other federal, district/state programs, and Title I for students in non-public schools, respectively. Expenditures over $1,000 per-participant are quite unlikely except for expenses for some high-cost equipment or resource centers that were not amortized over their long-term utility. The unusually high (or low) estimated per-participant expenditure could also be introduced by the inaccuracies of the reported number of students served. Though we have excluded the districts with estimated expenditures over $1,000 per-participant from the computation, readers are advised to accept these data cautiously. Bearing in mind some doubt about the accuracies of these data we find that the average district's per-participant expenditure for Title I to be higher than that for Other CE programs. The average value of $392 for Title I is somewhat larger than

Table 9-7

Title I Program Characteristics for Participating Districts, by the District's Percentage of Students Meeting Title I Poverty Criteria

(Based on 214 Title I Districts)

Program Characteristics	Percentage of Students Meeting Title I Criteria											
	1-13%			14-25%			26-100%			Total		
	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
Percentage of eligible schools receiving Title I funds	92.0	25.4	66	95.7	10.4	75	96.9	9.5	73	95.0	16.4	214
Percent of time Title I coordinator devotes to Title I program activities	34.0	30.8	66	53.1	37.7	75	65.9	36.3	72*	51.5	37.3	213*
Yearly frequency of Title I communications	24.1	7.4	66	25.1	6.4	75	28.4	6.4	72*	25.9	6.9	213*
Number of years district has participated in Title I	10.9	2.4	66	11.4	1.6	75	11.3	1.8	73	11.2	1.9	214
Average Title I per-participant expenditure	$382	$180	60	$386	$184	75	$406	$211	70	$392	$192	205**

*Data for one Title I district were not available.

**Three Title I districts did not report the expenditures. These districts and the districts that reported a per-participant expenditure of over $1,000 were excluded from the calculations.

Table 9-8

District Per-Participant Expenditures for CE Services

	CE Service			
Per-Participant Expenditure	ESEA Title I*	Other Federal Programs	District/State Programs	Title I for Non-public Schools
Mean	$392	$257	$248	$356
Median	$365	$172	$219	$333
Standard Deviation	$192	$221	$189	$208
N**	205	54	100	97

*Valid expenditure data for three Title I districts were not available.

**Districts with outlier values, $1,000 or more, were excluded from the computations.

the national average expenditure for Title I participants, as reported by the U.S. Office of Education ($351; U.S.O.E., 1978). Both figures include per-participant expenditures for kindergarten and secondary programs.

CHAPTER 10. SCHOOL CHARACTERISTICS AND COMPENSATORY PROGRAMS

In chapter 9, district characteristics, their relation to receipt of CE funds, and characteristics of Title I program implementation at the district level were examined. This chapter turns to a more immediate agent for the delivery of compensatory services–the school. While districts can exert some control over the implementation of compensatory programs, particularly through allocation of funds, most CE takes place in the schools. It is therefore expected that school characteristics will be closely related to critical aspects of the CE program.

School Characteristics and Receipt of CE Funds

Federal guidelines regarding school eligibility for Title I leave the final determination, within limits, to individual districts. The eligibility of schools for receipt of Other CE funds varies with the source of the funds and the goals of the programs. An analysis of characteristics of schools in different categories of CE receipt should shed light on the criteria that determine whether and in what kinds of CE programs a school participates.

CE Participation and School Characteristics. Table 10-1 examines twenty school characteristics for three groups of schools: 157 schools receiving Title I funds and possibly Other CE funds; 56 receiving only CE funds other than Title I; and 29 that receive no CE funds.

The data indicate that schools receiving no CE funds have smaller enrollments, on the average, than Title I or Other-CE schools. The average enrollment for the Title I schools is smaller than that for Other-CE schools. This may be explained by the smaller enrollments of the poor rural schools in the South that receive Title I, but no Other-CE, funds.

Table 10-1 shows that 98 percent of the Title I schools in the sample are eligible, by their district's eligibility rules, to receive Title I funds. The discrepancy from a 100 percent figure most likely results from schools that have students who participate in district-operated Title I projects. These schools may not meet the district's eligibility criteria for Title I. However, they are categorized as Title I schools, for purposes of this study, if they recorded any students receiving Title I services. It is also interesting to note that about 18 percent of the Other CE schools, and 10 percent of the non-CE schools, are eligible for Title I but are not participating.

On the average, Title I schools have greater concentrations of students at or below the poverty level than other schools–almost three times that of Other-CE and non-CE schools. This indicates that Title I funds are, to an appreciable degree, being directed to schools with high poverty concentrations. On the other hand, the non-Title I CE funds appear to be directed to a considerable number of schools with relatively low-poverty concentrations.

Turning to the concentration of low-achieving students, Title I schools have higher percentages of low-achieving students than do Other-CE or non-CE schools. In this context,

Table 10-1

Categories of School CE Participation and School Characteristics

	School CE Receipt Category							
	Title I (N=157)		Other CE (N=56)		No CE (N=29)		Total (N=242)	
School Characteristics	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Grade 1-6 enrollment	308.09	189.72	367.55	158.61	265.34	181.74	316.73	183.97
Title I eligibility (1 = eligible; 0 = not)	0.98	0.14	0.18	0.39	0.10	0.31	0.69	0.46
Percentage of poor students	15.34	17.38	5.53	6.91	6.69	6.31	12.04	15.21
Percentage of low-achieving students*	51.27	17.42	40.00	16.75	45.65	15.54	47.99	17.64
Parent education (ranges from 1-6)	2.92	0.50	3.44	0.57	3.32	0.54	3.09	0.57
District control of instruction (range: 13-54)	40.74	6.35	42.78	4.82	38.83	5.64	40.98	6.04
Percentage of students from non-English homes	9.00	18.05	4.61	6.72	4.24	5.79	7.41	15.16
Percent of minority students	25.72	33.70	17.09	20.96	23.76	31.19	23.49	31.00
Percent of students bused to promote racial balance	1.38	6.94	3.84	12.50	0.14	0.44	1.80	8.26
Intergroup relations (9 = poor; 15 = good)	12.21	1.53	12.18	1.40	12.24	1.40	12.21	1.48
Disruption of instruction (17 = none; 132 = much)	48.57	15.75	45.37	10.05	46.41	12.72	47.57	14.30
Student mobility rate (%)	20.72	20.63	20.06	21.46	16.62	12.41	20.08	20.01
Parent/community involvement (ranges from 14-84)	41.11	14.39	43.28	14.81	38.07	13.64	41.25	14.42
Staff per 100 students	7.98	3.74	6.62	2.57	6.31	3.65	7.47	3.55
Support personnel per 100 teachers	13.71	10.22	16.71	14.32	14.28	11.39	14.48	11.44
Ability grouping (6 = little; 12 = much)	9.25	1.23	9.50	1.31	9.03	1.57	9.28	1.30
Student role in decision making (0 = low; 13 = high)	0.81	1.28	0.95	0.90	0.83	1.28	0.85	1.20
School climate (24 = poor; 45 = good)	34.78	3.36	34.27	2.79	33.90	3.00	34.55	3.20
Emphasis on teacher training (214 = maximum)	31.04	20.69	30.75	17.61	34.52	35.81	31.39	22.32
Current per-pupil expenditure	$1,198	$479	$1,126	$463	$1,188	$403	$1,180	$466

*Students scoring at or below the 33rd percentile in reading and/or math are regarded as low-achieving in this context.

students scoring at or below the 33rd percentile in reading and/or math are regarded as low-achieving. The latter two types of schools, however, still have relatively high concentrations of low-achieving students, making the difference less pronounced than that for poverty concentrations. The Other-CE schools exhibit a somewhat lower concentration of low-achieving students than the non-CE schools. That non-Title I CE funds seem to go to many schools with lower concentrations of poor and low-achieving students, compared to the Title I schools, may be explained because these funds are not disbursed on the basis of the school's economic and educational status as are the Title I funds.

The average parental education level for students attending Title I schools is lower than it is for students attending Other CE or non-CE schools. The parent-education index ranges from '1' for non-completion of grade school to '6' for post-college degree. A value of '3' signifies completion of high school. This result, and the one described above for poverty concentration, are probably related to the lower socio-economic status of many students in Title I schools.

Compared to the non-CE schools, the instructional programs of the Title I, and Other CE schools reflect a greater degree of control and participation in decision-making by their respective districts. The other fourteen characteristics described in Table 10-1 do not differ much among the three groups of schools.

Differences Between CE and Non-CE Schools. To further explore the differences between CE and non-CE schools, a two-group discriminant analysis was performed by combining the Title I and Other CE schools and comparing them with the non-CE schools. All the school characteristics described in Table 10-1 were included in the preliminary analysis, with the exception of school Title I eligibility. This latter variable would be the essential discriminator between CE and non-CE schools. The interest here, however, is to investigate what general characteristics differentiate between the two types of schools. A stepwise discriminant analysis procedure was employed to select the discriminating variables. Of the nineteen variables included, five were selected. The remaining variables were eliminated since, given the five selected variables, they do not add significantly to the discriminating power (as judged at the .05 level). The results indicate that CE schools in comparison to non-CE schools are more likely to have a larger student enrollment, a higher staff-to-student ratio, a lower parental education level, greater control and participation in the instructional programs by their districts, and a lower percentage of minority students. These five discriminators jointly attain a canonical correlation of .32, a drop from the .39 obtainable if all 19 variables were used. Although the finding of lower minority concentration in CE schools seems contrary to our intuitive belief, it may be inferred from Table 10-1 that non-Title I CE schools are responsible for this outcome. As shown in Table 10-1, non-Title I CE schools constitute 26 percent of the CE schools, and generally have lower minority concentration than other types of schools.

CE Participation and Grade Span of School. Table 10-2 presents the percentages of Title I, Other-CE, and non-CE schools for each of the four types of schools classified on the basis of the grades they operate. In comparison to the other three types of schools, a smaller percentage of the intermediate and middle grade schools receive Title I funds. Because Title I programs place an emphasis on compensatory services for students at the elementary grades (NIE, 1977), particularly for the 2nd, 3rd, and the 4th graders (Breglio, et. al, 1978), schools with mostly higher grades are less likely to receive Title I funds. Though a considerable proportion of the intermediate and middle grade schools receive non-Title I CE funds, they are still more likely to be without CE funds than the elementary and primary schools.

Table 10-2

School Grade Span and Participation in Compensatory Programs

School CE Receipt Category	School Grade Span							
	Full-Range Elementary		Elementary Feeder		Primary		Intermediate and Middle	
	N	%	N	%	N	%	N	%
Title I Only/ Title I Plus Other CE	115	68.0	17	65.4	13	68.4	12	42.0
Other CE only	34	20.1	7	26.9	4	21.1	11	39.3
Non-CE	20	11.8	2	7.7	2	10.5	5	17.9
Total	169	99.9*	26	100.0	19	100.0	28	100.1*

*Discrepancies due to rounding error.

Relationship of Characteristics of Schools and Their Educational Programs With District Characteristics

Table 10-3 displays the intercorrelations among twenty-six district, school, and educational program characteristics, along with their means and standard deviations. The correlations were obtained with schools as units of analyses. Since the main interest here is to examine how characteristics of schools and their educational programs are related to the characteristics of their respective districts, the discussions will be centered on the correlations of characteristics of school districts with other school level characteristics. The intercorrelations among characteristics of school districts, among school characteristics, and among

Table 10-3

Means, Standard Deviations, and Correlations Among 26 District, School, and Educational-Program Characteristics for 242 Schools*

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Mean	Standard Deviation
District Characteristics																											
1. Average Daily Attendance	12	-01	-02	-09	15	17	22	-14	-05	-05	-05	-05	-05	-04	-04	10	-07	03	10	02	22	06	12	03	-07	20212.17	51476.40
2. Percentage of Students below Poverty		13	10	-03	15	01	-01	03	-07	-02	-02	-02	-02	-05	-01	14	-27	05	-02	-12	09	13	04	15	-04	25.49	18.38
3. Top-Heaviness – Percentage of Administrative Staff			13	-01	00	-15	-15	37	05	-07	-07	-07	-07	-09	-09	-10	09	-20	-16	-01	-06	-02	-04	11	01	5.38	3.22
4. Testing Frequency (3=annually; 0=never)				02	-04	-13	00	08	06	04	04	04	08	10	11	-13	01	-12	04	03	04	-04	-04	07	09	2.41	0.82
5. District Control of School Programs (Range = 0-8)					-07	02	-10	-13	-05	-01	-01	-01	-05	-07	-07	-08	-08	42	-01	-12	-10	06	06	-07	12	4.48	1.53
6. Number of Instructional Items in Teacher Contract (Range = 0-9)						07	-05	03	-04	04	04	04	02	02	06	01	-15	35	-01	-06	17	06	09	01	12	1.86	1.59
School Characteristics																											
7. Principal Experience and Training (Range = 5-49)							07	-20	03	-08	-08	-08	-09	-08	-10	07	-02	11	04	-04	13	14	11	-07	02	26.54	7.82
8. Teacher Experience and Training (Range = 8-44)								-23	-04	00	00	00	02	-02	-04	08	13	-02	15	09	21	10	17	-03	-13	18.82	4.63
9. Staff Personnel Per 100 Students (Range = 3-36)									25	-02	-02	-02	-04	-04	-03	-09	-02	-22	-06	06	04	04	-04	30	20	7.47	3.55
10. Support Personnel Per 100 Teachers (Range = 0-75)										-08	-08	-08	-08	00	06	-14	-22	-10	14	07	-06	-02	03	06	06	14.48	11.44
11. Incidence of Half-Day Sessions – Grade 1											1.00	1.00	92	77	71	-03	-07	04	12	03	-04	19	14	-06	02	.03	.17
12. Incidence of Half-Day Sessions – Grade 2												1.00	92	77	71	-03	-07	04	12	03	-04	19	14	-06	02	.03	.17
13. Incidence of Half-Day Sessions – Grade 3													92	77	71	-03	-07	04	12	03	-04	19	14	-06	02	.03	.17
14. Incidence of Half-Day Sessions – Grade 4														83	77	-02	-09	04	11	03	-03	05	06	-05	01	.02	.16
15. Incidence of Half-Day Sessions – Grade 5															92	-02	-16	01	10	01	-11	-05	-04	-07	01	.02	.16
16. Incidence of Half-Day Sessions – Grade 6																-03	-19	03	08	03	-13	-05	-06	-08	02	.03	.17
17. Student Mobility Rate (Range = 5-100)																	-04	18	13	09	27	-04	-02	03	10	20.08	20.00
18. Parents' Involvement in Child's Education (Range = 0-4)																		-04	02	07	25	09	11	02	-04	1.85	0.76
Educational Program Characteristics																											
19. District Control of Instruction (Range = 13-54)																			14	00	09	10	10	-01	12	40.98	6.04
20. Principal's Instructional Leadership (Range = 30-74)																				38	26	16	26	23	08	52.22	7.71
21. Teacher's Role in Decision-Making (Range = 25-56)																					24	08	15	28	20	39.13	5.96
22. Parent/Community Involvement (Range = 14-84)																						19	24	28	00	41.25	14.42
23. Intensity of Staff Training (Range = 0-556 hours)																							80	06	07	14.41	25.70
24. School Emphasis on Teacher Training (Range = 2-214)																								13	-01	31.39	22.32
25. Student Role in Decision-Making (Range = 0-13)																									02	.85	1.20
26. Use of Test Results for CE Selection (Yes=1; No=0)																										.81	.39

*Decimal points omitted from correlation coefficients.

educational program characteristics will be described later. To avoid tedious enumeration of all the correlations contained in Table 10-3, only those with a magnitude of .16 or greater are included in the following presentation. Although this choice is somewhat arbitrary (the value of a correlation coefficient needed to be significant at the .01level), it serves to screen out many trivial relations.

Correlation Between District and School Characteristics. Inspection of the correlations of each of the six distinct characteristics with the twelve school characteristics reveals:

- Average Daily Attendance (ADA) of the school district correlates positively with
  - experience and training of the school's principal (r = .17);
  - experience and training of the school's teachers (r = .22).

  This implies that schools in larger districts (as measured by the district's ADA) tend to have more experienced and better trained principals and teachers. One possible explanation of this finding would be that the rural, small districts are less attractive to educators, while large districts offer them more career opportunities or higher salaries.

- The percentage of students below poverty level in the school district has a negative correlation with the school's average level of parental involvement in their own child's education (r = -.27). This result probably reflects the fact that parents of poverty students are less likely to be involved in their child's schooling.

- The percentage of administrative staff (an index of 'top-heaviness') in the school district correlates positively and substantially with the school's staff/student ratio (r = .37), indicating that schools in top-heavy districts are likely to have more staff per 100 students, compared to schools in other districts.

Correlation Between District Characteristics and Characteristics of Schools' Educational Programs. The data in Table 10-3 show a substantially positive correlation (r = .42) between district control of school programs and district control over instruction. This may be explained by the considerable overlapping of the two composites (they are based on many identical measures). Excepting this case, the results worth noting are:

- Administrative 'top-heaviness' of school districts is negatively correlated with
  - District control over school's instructional program (r = -.20);
  - Principal's instructional leadership (r = -.16).

  This finding indicates that principals of schools in districts that have larger percentages of administrative staff tend to have weaker instructional leadership. These schools also experience less control over instructional programs by their districts.

- Number of instructional issues addressed in teacher contract correlates positively with
  - district control over instruction (r = .35);
  - parent/community involvement in school's educational programs (r = .17).

  This result means that districts with heavier emphasis on instructional issues in their teacher contracts exert greater control over the school's instructional programs. Schools in these districts may tend to encourage parent/community involvement in school activities. On the other hand, it could also be that higher levels of parent/community involvement stimulate the coverage of more instructional issues in the teacher contract.

Correlations Between School Characteristics and Their Educational Program Characteristics. The school characteristics that are appreciably correlated with program characteristics are discussed below.

- Experience and training of the school's teachers is correlated positively with
  - Parent/community involvement in educational programs (r = .21);
  - School's emphasis on teacher training (r = .17).

  This result probably indicates that schools with higher levels of parent/community involvement place greater emphasis on teacher training and tend to keep teachers who have more experience and training.

- Staff/student ratio in the school is positively correlated with
  - Student's role in decision making (r = .30);
  - Use of test results for CE selection (r = .20).

- and negatively correlated with
  - District control over instruction (r = -.22).

  The positive correlations may imply that schools with proportionately larger staffs can afford personnel time to involve students in decision-making, and to screen test results for CE selection. The negative correlation shows that those schools are more likely to be associated with districts that exert less control over a school's instructional program

- Student mobility rate correlates positively with
  - District control over instruction (r = .18);
  - Parent/community involvement in educational programs (r = .27).

  One of the possible explanations of the latter correlation would be that schools with high student mobility are in cities and suburbs where the environments make it easier for parents and community members to get involved in a school's program.

- Average level of parental involvement in their child's education and school activities is positively correlated with the school's degree of parent/community involvement in its programs (r = .25). This correlation probably reflects the fact that parents who are more concerned with their child's education also involve themselves more in a school's educational programs.

Although incidences of half-day school sessions for each grade are included in Table 10-3 as school characteristics, and a few of their correlations with program characteristics reach magnitudes of .10–.19, they are not discussed here. Half-day sessions were rare–for each grade, less than 3 percent of the representative schools reported having half-day sessions. The distributions over schools are therefore highly skewed, and inferences from correlations obtained under this circumstance would be tenuous.

In passing, it is of interest to note that the principal's experience and training correlates negligibly (r = .04) with the principal's instructional leadership. However, the latter is positively, though not substantially, correlated with teachers' experience and training (r = .15). It could be that principals who demonstrate stronger leadership and are more actively involved in instructional matters attract and keep more qualified teachers.

Though it is not the primary interest of this section, the intercorrelations among characteristics of school districts, among school characteristics, and among program characteristics are summarized here.

Correlations Among Characteristics of School Districts. Intercorrelations among the six characteristics of school districts given in Table 10-3 are low and will not be further discussed.

Correlation Among School Characteristics. For the same reason discussed earlier in this section, the correlations involving the incidence of half-day school sessions are not elaborated here. With these exclusions, non-negligible correlations among school characteristics include

- Staff/student ratio is correlated
    - Negatively with experience and training of school's principal (r = -.20);
    - Negatively with experience and training of school's teachers (r = -.23):
    - Positively with support personnel/teacher ratio (r = .25).

  The negative correlations indicate that schools with more staff per 100 students tend to have principals and teachers with less experience and training. The proportionately larger staff of these schools may in part be explained by the larger proportion of support personnel on the staff.

- Average level of parental involvement in their own child's schooling correlates negatively with
    - Support personnel/teacher ratio (r = -.22).

  It is likely that schools with less support personnel for teachers rely more on parents' participation in their child's education and school activities.

Correlations Among Educational Program Characteristics. In general, the program characteristics are positively correlated with each other. The large correlation (.80) between the intensity of inservice training received by the teaching staff and the schools' emphasis on teacher training is largely due to the overlap of component measures for the two indicators. Both include percentage of teachers receiving training and total hours of training received during the year as major components. In addition, the following positive correlations are observed in Table 10-3:

- Principal's instructional leadership with
    - Teacher's participation in decision-making (r = .38);
    - Parent/community involvement in educational programs (r = .26).
    - Intensity of inservice training for teaching staff (r = .16);
    - School emphasis on teacher training (r = .26);
    - Student participation in decision-making (r = .23).

- Teachers' participation in decision-making with
    - Parent/community involvement in educational programs (r = .24);
    - Student participation in decision-making (r = .28);
    - Use of test results in CE selection (r = .20).

- Parent/community involvement with
    - Intensity of inservice training for teaching staff (r = .19);
    - Emphasis on teacher training (r = .24);
    - Student participation in decision-making (r = .28).

In summary, principals who demonstrate stronger instructional leadership appear to stimulate higher levels of participation from all constituencies of the school (teachers, students, parents, and community members). Their schools also tend to place a greater emphasis on staff training. Finally, it is noted that the use of test results for CE selections are more frequently found among schools whose teachers more actively participate in instructional decision-making.

Educational Programs and CE Services in Relation to School Characteristics

The primary concern of this section is how the characteristics of educational programs and services are related to the characteristics of schools. Table 10-4 presents the correlations among 25 characteristics of schools, their educational programs, and services. We will first examine the relation between school characteristics and characteristics of school educational programs and services. Then other interrelations among characteristics of schools, programs, and services will be described. In the presentation below, we will again select only correlations with magnitudes greater than .16, if such correlations point to relations of interest for discussion.

Program Characteristics and Services in Relation to School Characteristics. Since the main concern of later reports will be on what kinds of programs are more effective in improving student basic skills, it is important to understand first how school characteristics affect the nature of educational programs and services. To provide some answers to this question, each program and service characteristic is examined in terms of its correlations with the 11 school characteristics included in Table 10-4.

Parent/Community Involvement in School Programs. The school characteristics which are related to a higher extent of parent/community involvement in educational programs are:

- Larger grade 1–6 enrollment (r = .27)
- Higher percentage of low-achieving students (r = .27)
- Higher percentage of students from non-English speaking homes (r = .22)
- Higher percentage of minority students (r = .32)
- Higher student mobility rate (r = .27)

It appears that schools with these characteristics are likely to be CE schools that have directed greater effort to encourage parents and community members to become involved in the school's educational programs.

Principals' Instructional Leadership. There is no clear picture as to what kinds of schools tend to have principals who actively participate in instructional activities and decision-making. The two noticeable positive correlations are with school's grade 1–6 enrollment (r = .28), and with school's percentage of minority students (r = .20).

Teachers' Role in Decision-making. Schools whose teachers are more frequently involved in instructional decision-making tend to have large grade 1–6 enrollments (r = .17), and more positive school climate (r = .29). The teachers in these schools express greater satisfaction and there is greater harmony among staff. It may be noted that the composite for school climate does not consider intergroup relations.

Intensity of Staff Training. Correlations of training intensity with the 11 school characteristics are generally low. There is only one appreciable positive correlation, and that is with schools' percentage of minority students (r = ,20). However, the relation is not sufficiently strong to warrant further speculation of its implication.

Average Class Size. As expected, schools with larger classes tend to be larger schools (r = .45), have proportionatley smaller staffs (r = -.43 with staff/student ratio), and more experienced principals (r = .17). Note that except for a few schools that operate primarily upper grades, e.g., 5 to 8, the schools' grade 1–6 enrollment can be considered as an index of school size.

Placement of Students Based on Ability. There are no relations worth noting. Apparently, a school's practice of placing students in regular classes on the basis of achievement is not systematically influenced by the various school characteristics.

Individualized Instructional Approach in Reading and Math. The extent of individualized instruction is related to the schools' percentage of low-achieving students, and percentage of minority students. However, the relationships are not strong (with correlations in the 20's). This is likely an indication that individualized approaches are frequently used to accommodate the needs of low-achieving students.

Student Role in Decision-making. In addition to the positive correlation with staff/student ratio noted in an earlier section (see page 237), students tend to participate more frequently in instructional decision-making at schools having higher percentages of low-achieving, and minority students. But the relation is weak (r = .18 and .17, respectively).

Amount of Structure in Instruction. Schools with teachers and principals who believe that instructional practices can affect student achievement tend to have instructional programs that are more structured. The correlation is quite substantial (r = .69). Teachers in these schools frequently use specific lesson plans in their daily instruction, and provide detailed feedback to the students about their performance. Previous studies have found that the more structured the instruction, the more effective they are. One may see from here that it is beneficial to have a staff that believes it can improve student achievement by adopting effective instructional methods.

Hours of Reading and Math Instruction Offered Per Year. It is interesting to note that amount of reading instruction offered to students has little relationship to the school characteristics, except for a positive correlation with the teachers' belief in the effects of instructional practices on achievement (r = .22). On the other hand, the amount of math instruction offered appears to be related to a school's percentage of low-achieving students, poverty concentration, and minority concentration (correlations in the 20s to 30s).

Per-Pupil Expenditure for Education. The current per-pupil expenditure for regular education is moderately correlated with the staff/student ratio, (r = .40). This is expected because staff salaries account for a major portion of educational expenditures. The correlation between per-participant CE expenditure and staff/student ratio is smaller (r = .19), since the latter measure applies to the entire school rather than for CE selectees only.

The remainder of this section summarizes other information contained in Table 10-4 which is not a primary topic here but may be of potential interest to educators.

Interrelations Among Characteristics of Educational Programs and Services. Inspection of the lower portion of Table 10-4 reveals a cluster of positively intercorrelated characteristics:

Table 10-4

Means, Standard Deviations, and Correlations Among 25 School, Educational-Program, and CE Service Characteristics for 242 Schools*

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Mean	Standard Deviation
School Characteristics																										
1. School's Grades 1–6 Enrollment	10	-06	08	20	03	-40	14	13	00	-24	27	28	17	08	45	15	13	23	03	05	13	08	-14	-06	316.73	183.97
2. Percentage of Low-Achieving Students**		59	45	68	-01	08	26	00	00	-27	27	07	-01	10	04	-04	27	21	18	-11	13	32	-11	-05	47.99	17.64
3. Percentage Poverty Students			53	46	02	19	12	-04	-01	-14	08	08	-02	03	-13	-06	10	07	15	-05	09	30	-04	-01	12.04	15.21
4. Percentage Students with Non-English Homes				57	06	16	29	12	-03	-19	22	09	11	02	06	-08	09	11	09	-02	03	14	09	-01	7.41	15.16
5. Percentage Minority Students					01	10	24	15	14	-25	32	20	02	20	11	-05	21	24	17	05	16	24	03	06	23.49	31.00
6. Support Personnel Per 100 Teachers (Range = 0–75)						25	-14	03	-11	03	-06	14	07	-02	12	06	03	-01	06	-10	-16	-10	03	00	14.48	11.44
7. Staff Personnel Per 100 Students (Range = 3–36)							-09	-20	14	14	-04	-06	06	04	-43	-05	05	-04	30	01	-03	02	40	19	7.47	3.55
8. Student Mobility Rate (Range = 5–100)								07	-03	-09	27	13	09	-04	10	-07	08	12	03	09	15	01	-10	-09	20.08	20.01
9. Principal Experience and Training (Range = 5–49)									12	-10	13	04	-04	14	17	-02	-03	-07	-07	14	03	08	-13	-07	26.54	7.82
10. Belief That School Affects Achievement (Range = 16–41)										00	-02	12	14	11	-13	08	00	00	07	69	22	10	03	12	27.99	4.18
11. Extent of Positive School Climate (Range = 24–45)											-01	07	29	09	-14	00	05	08	13	-13	-09	-13	07	-03	34.55	3.20
Educational Programs																										
12. Parent/Community Involvement (Range = 14–84)												26	24	19	18	00	31	25	28	-06	22	10	08	05	41.25	14.42
13. Principal's Instructional Leadership (Range = 30–74)													38	16	19	11	18	26	23	01	10	01	-07	02	52.22	7.71
14. Teacher's Role in Decision-Making (Range = 25–56)														08	05	03	19	38	28	00	10	-01	09	01	39.13	5.97
15. Intensity of Staff Training (Range = 0–556 hours)															12	-06	12	06	06	-01	16	13	02	-07	14.41	25.70
16. Average Class Size																09	03	04	-05	-02	01	-09	-27	-10	19.97	4.40
17. Placement of Students Based on Ability (Range = 6–12)																	-09	08	-04	11	13	-03	00	00	9.29	1.30
18. Individualized Reading Approach (Range = 15–27)																		58	33	-18	-09	09	02	-03	19.91	2.05
19. Individualized Math Approach (Range = 11–24)																			25	-16	-05	02	11	-07	15.79	1.88
20. Student Role in Decision Making (Range = 0–13)																				-10	-06	02	11	04	0.85	1.20
21. Amount of Structure in Instruction (Range = 0–10)																					22	09	00	08	5.35	0.89
Educational Services																										
22. Hours of Reading Offered Per Year (Range = 104–540)																						40	00	07	242.49	53.67
23. Hours of Math Offered Per Year (Range = 108–272)																							-03	00	175.60	25.44
24. Current Per-Pupil Expenditure																								20	1180.10	465.87
25. Per-Participant CE Expenditure																									337.39	241.00

*Decimal points omitted from correlation coefficients.

**For this analysis, students who score below the 33rd percentile in reading and/or math are regarded as low-achieving.

- Parent/community involvement in educational programs
- Principal's instructional leadership
- Teacher's role in decision making
- Student's role in decision making
- Individualized instructional approach in reading
- Individualized instructional approach in math

The intercorrelations range from .19 to .58. The cluster indicates a tendency to have programs that are characterized by a higher level of participation from all concerned parties, and a greater degree of individualization in instruction.

Hours of reading instruction offered per year is substantially correlated with hours of math offered (r = .40). This is partly explained by the fact that schools with longer school years are likely to offer more hours of both reading and math instruction per year.

The per-pupil expenditure for education does not correlate appreciably with other program characteristics and amount of services. An exception is its negative correlation with average class size (r = -.27). This is largely because larger classes require proportionately less teaching personnel and therefore cost less.

Interrelations Among School Characteristics. Only those that have not been covered in the previous section will be discussed. Most of the positive correlations are observed in the following cluster:

- Percentage of low-achieving students
- Percentage of students from low-income families
- Percentage of students from non-English speaking homes
- Percentage of minority students
- Student mobility rate

The correlations among the first four indicators range from .46 to .68, while the fifth indicator correlates with the others in the 20's. This finding is consistent with the general belief that low-achieving students are likely to come from families of low-income, minority groups, migrant workers, and non-English speaking homes.

Another observation in the left corner of Table 10-4 shows that larger schools tend to have higher minority concentrations (r = .20), and proportionately smaller staffs (r = -.40). Additionally, in schools with larger enrollment and higher concentrations of low-achieving and poor students, the teachers exhibit somewhat less positive feeling towards the school's programs and there is less staff harmony (r's in the negative 20's).

Characteristics of Educational Programs in Relation to School Grade Span. In addition to the correlational analyses described above, the characteristics of educational programs and services are compared among schools of various types of grade-span.

The 242 representative schools were classified into four types according to the grades they operate. The 169 full-range elementary schools have all six grades; the 26 elementary feeder schools mostly have grades 1 to 5; the 19 primary schools operate grades 1–4; and the 28 intermediate and middle schools concentrate on grades 5 and 6. Table 10-5 displays summary measures of eleven program characteristics for the four types of schools.

In most respects, the four groups of schools have very similar program characteristics. A noticeable difference is found in hours of reading instruction offered per year. The elementary feeder and primary schools offer more hours than the intermediate and middle schools. This conforms to the concept that the major goal of education for primary grades (particularly 1–2) is to teach the children to read. As they proceed to higher grades, other subjects are introduced and instructional time is distributed to diversified areas. It may also be observed that a considerably less amount of inservice training was received by the teaching staff in the intermediate and middle schools. This suggests a greater emphasis on inservice training for primary grade teachers.

Table 10-5

Characteristics of Educational Programs by Types of School Grade-Spans

Characteristics of Educational Programs	Full-Range Elementary (N=169)		Elementary Feeders (N=26)		Primary (N=19)		Intermediate and Middle (N=28)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Principal's instructional leadership (30 = low; 74 = high)	51.6	8.0	52.5	7.6	55.8	7.0	53.0	6.0
Teachers' role in decision making (25 = low; 56 = high)	38.6	6.0	39.9	5.3	41.6	5.0	40.0	6.5
Students' role in decision making (0 = none; 13 = much)	0.8	1.3	0.8	0.8	0.6	0.8	1.1	1.0
Intensity of inservice program (0 = low; 556 = high)	9.6	17.6	11.5	16.8	16.3	26.8	4.0	6.3
Hours of reading instruction offered per year	244.4	40.6	273.1	54.3	281.7	76.0	175.8	47.6
Hours of math instruction offered per year	175.8	24.0	183.6	29.7	173.3	29.5	168.3	26.2
Ability grouping (6 = none; 12 = much)	9.1	1.2	9.7	1.4	9.4	1.3	9.9	1.4
Individualized reading approaches (15 = little; 27 = much)	19.9	2.1	20.5	1.7	19.4	1.8	19.9	2.3
Individualized math approaches (11 = little; 24 = much)	15.7	1.7	16.2	2.1	15.5	1.9	16.2	2.6
Amount of structure in instruction (0 = little; 10 = much)	5.3	0.8	5.4	0.8	6.0	1.2	5.1	0.9
Average class size	19.6	4.4	19.6	5.1	20.4	4.1	22.4	3.4

CHAPTER 11. PARENTAL AND COMMUNITY INVOLVEMENT

There has been a strong conviction among many for some years that the involvement of parents and communities is an important and necessary aspect of an effective educational program. Indeed, many federal educational programs, Title I in particular, have stressed parental participation and involvement in order to increase the effectiveness of the programs. Among the various Title I regulations, the Local Educational Agency (LEA) is required to establish a Parent Advisory Council (PAC), which is mainly composed of parents of eligible children to be served, at both the district and the school level (Title I, Elementary and Secondary Education Act of 1965, as amended through June 30, 1977, Part D). Although no formal role is specified, the PACs generally assume the responsibility of advising the LEAs and the schools on the planning, implementation, and evaluation of the program. Other CE programs have also followed Title I in emphasizing parent/community involvement as an integral part of the programs. At the individual level, there is an effort to encourage the parents to become involved in their child's education and to actively participate in school activities, such as Parent Teacher Associations (PTAs). To have a complete understanding of the characteristics of the nation's educational programs, especially CE programs, it is important to know the role that parents and community members play in them. The first section of this chapter is, therefore, devoted to descriptions of the various areas of parent/community involvement.

In the past decade, numerous studies have attempted to establish connections between parental involvement and program success (Jablonsky, 1968; McLaughlin, 1971), and to relate the nature and extent of parental participation in their child's education to student achievement and educational growth, e.g., Jarvis, et al., 1977; Jencks, 1972; Mayeske, 1973. Although there have been no definitive conclusions, the findings of these studies generally show positive effects of parental involvement on educational development. In view of such beneficial effects, it is of interest to examine the correlates of parental involvement. The second part of this chapter specifically considers the relationship of the extent of parental involvement with student and school characteristics.

Parental Involvement in Educational Programs

District Title I Parent Advisory Council. The Title I districts in the Representative Sample were asked to indicate how their Parent Advisory Councils are involved in planning the district's program and what topics are covered in the training provided to PAC members. The results of this survey are presented in Table 11-1. The most frequent type of involvement occurs in regularly scheduled meetings where program plans are discussed (78.4 percent). Title I staff briefings are also used quite frequently (67.6 percent). Only a few districts (5.2 percent) that participate in Title I reported no PAC or no involvement of a PAC in planning the program. In most districts, more than one approach was employed to involve PAC members in program planning, with an average of two per district. The average number of training topics covered by a district is three. Needs assessment, program planning, and evaluation were included most frequently in the training (85.9 percent), followed

Table 11-1

Involvement and Training of District Title I Parent Advisory Councils (PACs) in 213* Title I Districts

PAC Involvement/Training	Percentage of Districts
Type of involvement in planning the district's Title I program:	
Regularly scheduled meetings	78.4
Briefings by Title I staff	67.6
PAC meetings with Title I staff to plan the program	46.5
Mailed information on plans	34.3
PAC not involved in planning the program	3.8
No district Title I PAC	1.4
Training topics provided to the PAC by the district:	
Needs assessment, program planning, evaluation	85.9
How Title I works at national, state, and local levels	82.6
Budget preparation	52.6
How to get people to work together	39.9
Parliamentary procedures	26.3
No training provided	8.0
No district Title I PAC	1.4

*One of the 214 Title I districts did not respond to the two items used for this tabulation.

closely by the topic of how Title I works at the national, state, and local levels (82.6 percent). No PAC training takes place in 9.4 percent of the districts.

School Effort to Encourage Parental Involvement. Parental involvement in school activities is often viewed as a valuable asset in providing a richer educational environment. Before we describe the characteristics of parental involvement it is helpful to first examine what the schools have done in order to stimulate parental involvement in the schools, and what procedures for obtaining parents' input are followed. Since implementation of CE programs may affect school policy in these areas, the school's category of receipt of CE funds is taken into consideration in the subsequent analyses of this section. As done throughout this report, the schools are divided into the following three groups in terms of the kinds of CE funds they receive: (1) *Title I schools* that receive Title I funds, singly or in combination with other non-Title I CE funds, (2) *Other CE schools* that receive *only* non-Title I CE funds, and (3) *Non-CE schools* that receive no CE funds.

Table 11-2 presents the percentages of schools that maintain formal procedures for soliciting parent's suggestions or complaints. The formal procedures refer to meetings of parent advisory organizations, meetings of the Parent Teacher Association, or contact with the

Table 11-2

Procedures for Securing Parents' Suggestions and Complaints
and School Receipt of CE Funds

Procedure	Title I Schools (N=157)	Other CE-Schools (N=56)	Non-CE Schools (N=29)
Percentage of schools with informal procedures	21.7	17.9	27.6
Percentage of schools with formal procedures	78.3	82.1	72.4

school's administrative staff. The results indicate that the majority (about three-fourths) of the schools have established one or more of these formal procedures for securing input from parents. There are no substantial differences among the three types of schools in this respect.

The number of methods used by the schools to promote parental involvement is employed here as an index of the extensiveness of the schools' effort in getting parents involved. The seven methods counted were: publication of a newsletter, provisions for parent conferences in the evening, use of the school for adult-education classes and community meetings, provision of means for parents to participate in planning and decision making, scheduling of faculty-parent social functions, recruitment and use of parent volunteers, and visitation of parents at home by staff. The frequency distribution and the mean of this index for each of the three groups of schools are given in Table 11-3. It was found that all of the 242 Representative Schools engage in at least one promotional activity. The data show that Other-CE schools, on the average, use more types of promotional activities than the other two groups. That Title I schools have a smaller mean number of such activities need not necessarily indicate a lesser degree of effort because this item reflects only the variety, not the intensity, of the activities.

Parental Involvement in School Programs. Table 11-4 presents the data for some specific school activities in which parents may be involved. Overall, the results indicate little difference in parental involvement among the three types of schools. The first item in the table describes the principal's perception of the parents' role in four areas of instructional decision-making: determining course content, selecting texts and materials, budgeting, and teacher hiring. The findings show that, across all three groups of schools, parents typically have little influence on such decisions. With respect to the representation of parents at PTA meetings, no significant difference is found among the three groups of

Table 11-3

School Promotion of Parental Involvement and Receipt of CE Funds

Number of Activities School Engages in to Promote Parental Involvement	Title I Schools (N=157)	Other-CE Schools (N=56)	Non-CE Schools (N=29)
	Frequency Distribution (percentage of schools)		
1 Activity	14.6%	3.6%	6.9%
2 Activities	16.6%	8.9%	20.7%
3 Activities	26.8%	25.0%	44.8%
4 Activities	18.5%	30.4%	17.2%
5 Activities	12.7%	17.9%	3.4%
6 Activities	5.7%	7.1%	6.9%
7 Activities	5.1%	7.1%	0.0%
	Average Number of Activities		
	3.4	4.0	3.1

Table 11-4

Parental Involvement in School Programs and School Receipt of CE Funds

Index of Parental Involvement in School Programs	Title I Schools (N=157)		Other CE-Schools (N=56)		Non-CE Schools (N=29)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Parent's role in instructional decision-making (range = 0–4)	0.5	0.9	0.7	1.0	0.3	0.7
Percentage of students' families represented at PTA meetings	19.2%	20.7%	26.3%	27.0%	24.1%	26.4%
Percentage of staff positions filled by parents	16.0%	24.9%	14.3%	25.5%	16.7%	30.9%
Parent participation in parent orientation, organization meetings, parent services (range = 0–3)	1.1	1.1	1.5	1.2	1.3	1.2
Number of times per year principal meets with parent groups	3.6	1.0	3.9	0.7	3.7	0.9

schools, though it appears that Title I schools have a somewhat smaller average percentage of students' families represented than do the other two groups.

Parental Involvment in Child's Eduation. At the student level, analyses were performed to compare the percentages of parents interacting with teachers in each of the three listed contexts among the three categories of schools. Participation of parents in special school events, such as a parents' day or open house, and parental involvement in eight other forms are also described. The eight additional activities are: participating as guest visitor/speaker, homeroom parent, volunteer aide, paid aide, other school staff, regular attendee at Parent Teacher Organization (PTO) meeting, officer of a PTO, and member of a PAC.

The results of these analyses are shown in Table 11-5. The three groups of schools are quite similar with respect to each of these areas of parental involvement. About half of the parents have met with the teachers to discuss their child's general progress. In contrast, only a little more than 10 percent of parents met with the teachers for their child's discipline problems. Participation rates in school special events are 48 percent for Title I schools, and more than 50 percent for Other-CE and Non-CE schools. Parents in all schools typically have low levels of participation in other forms, with averages of less than one activity per family.

The frequency distributions of the total amount of parental involvement at the individual level are also compared among the three groups of schools in Table 11-5. The index of total involvement combines the twelve types of participation considered above, disregarding the nature of the activities. As in the cases of meetings with teachers to discuss a child's general progress, and attendance at special school events, there is a slight tendency for students at Other-CE schools to have a greater degree of parental involvement than students at Title I schools. Parents of students in Title I schools tend to be less involved in their children's schooling, and the effort generated through Title I programs has not resulted in equal quantity of parental involvement.

Parent/Community Involvement in Relation to Characteristics of Schools and Students

In view of an increased awareness of the importance of parental involvement in educational programs, it is of interest to learn how parent/community involvement is related to the characteristics of schools and students. In a more general context, previous chapters of this report have described some of these relationships. Specifically, Chapter 3 looked at the correlations of the extent of parental involvement in the child's education and school activities with various student characteristics, and Chapter 10 described the interrelations between parent/community involvement in school's programs and the characteristics of schools and their educational programs. In response to the current emphasis on the parental involvement programs, this section first recapitulates the earlier findings and then further examines some areas that have not been addressed before.

Table 11-5

Parental Involvement in Child's Education by School Category of Receipt of CE Funds

Parental Involvement in Child's Education	Students in Title I Schools (N = 49,726)	Students in Other CE-Schools (N = 21,040)	Students in Non-CE Schools (N = 7,851)
Percentage of students whose parents:			
Met with teachers to discuss discipline problems	11.2	12.0	11.5
Met with teachers to discuss academic progress	33.1	34.6	34.5
Met with teachers to discuss general progress	49.0	53.1	48.9
Visit the school for some formally scheduled event	48.4	57.4	52.0
Number of activities parents have participated in (max. = 8):			
Mean	0.3	0.4	0.4
S.D.	0.7	0.8	0.9
Total parental involvement*			
Percentage of students whose parents are involved in:			
No activity	33.4	26.6	29.0
1-2 activities	33.4	35.0	36.0
3-12 activities	33.2	38.4	35.0

*This index is obtained as the total number of activities the student's parents participated in, regardless of the nature of the activities. The activities considered are the activities referred to in the first part of this table.

At the school level, a composite measure of the level of parent/community involvement was developed. This measure comprises the extent of participation by parents and community members in decision-making on instructional matters, and in developing and evaluating instructional programs; school efforts to encourage and assist parents to get involved; the frequency of teacher contacts with parents to report student progress; the frequency of meetings with parent groups to solicit input; the representation of families in the PAC and PTA meetings; and the parents' roles in the schools as employees or volunteers. For a detailed description of the construction of this composite, the reader is referred to #9 of the SES report series, to be issued later. This indicator is scaled to range from 14 to 84, with an average of 41.25 for the 242 schools in the Representative Sample. A higher value reflects a greater degree of involvement. At the student level, the extent of parental involvement in the child's education is gauged by the frequency of parents' participation in a variety of school activities, their attendance at scheduled special events, and their meetings with teachers for discussing their child's problems and educational progress. This index is employed to measure the extensiveness of involvement of each child's parent(s). Descriptions and summary statistics for this composite may be found in Report #9 of the Sustaining Effects Study.

The school-level composite is employed in all analyses that relate parent/community involvement to school characteristics. The student-level composite, on the other hand, is used to describe the relationship between parental involvement and student characteristics.

Relationship Between Parent/Community Involvement and Characteristics of the District Associated with the School. The data presented in Table 10-3 show an appreciable and positive correlation (.22) between the level of parent/community involvement and the Average Daily Attendance (ADA) of the district with which the school is associated. The correlation of this involvement measure with the district's poverty concentration, as indexed by the percentage of students meeting Title I poverty criteria, is positive but weak ($r = .09$). To supplement the information contained in these correlations, the schools are classified into three categories according to district size (ADA). Means of the parent/community involvement composite are given in Table 11-6 for the three groups of schools. The result of an ANOVA for these data reveals significant differences among the school categories. The average level of parent/community involvement increases monotonically with district size. Similarly, the schools are divided into three groups in terms of their district's poverty concentration, and their means are compared in Table 11-6. Consistent with the finding of the correlational analysis, the differences in the level of parent/community involvement among the three poverty-concentration categories are not significant at the .05 level.

Since Title I programs have particularly emphasized the involvement of parents and community members, three groups of schools associated with districts that have participated in Title I for 0-5, 6-10, and 11-12 years, respectively, were also created and compared in terms of their levels of parent/community involvement. As shown in Table 11-6, nearly 85 percent of the 242 Representative Schools are associated with districts having more than ten years of Title I participation. Though these schools have a slightly higher mean than the other two groups of schools, the F test performed in the ANOVA is not significant at the .05 level.

Table 11-6

Extent of Parent/Community Involvement in Schools and Characteristics of the Associated Districts

Characteristics of the Associated District	Index of Parent/Community Involvement		
	Mean	S.D.	Number of Schools
District Size (K-12 enrollment)			
Small (56-3,616)	35.52	13.72	81
Medium (3,617-14,168)	40.91	12.20	79
Large (14,169-611,429)	47.24	14.85	82
District's percentage of students Meeting Title I poverty criteria			
0-13%	41.82	14.38	71
14-25%	40.55	14.64	80
26-100%	41.43	14.40	91
Years of Title I Participation			
0-5	37.10	15.87	10
6-10	36.74	11.05	27
11-12	42.05	14.66	205

Relationship Between Parent/Community Involvement and School Characteristics. As shown in Table 10-1, the Title I schools, Other-CE schools, and non-CE schools do not differ significantly in the level of parent/community involvement in their programs, though the non-CE schools have a slightly smaller mean of this composite index. This result supports the data presented in the first section and indicates that the level of parent/community involvement in Title I schools is typically not greater than that of Other-CE schools.

Turning to other school characteristics, the correlations displayed in Table 10-4 show that the degree of involvement is positively correlated with the school grade 1-6 enrollment (r = .27), the percentage of minority students (r = .32), and the percentage of low-achieving students (r = .27). The positive correlation between the level of parent/community involvement and the concentration of low-achieving students is partially attributable to the schools' minority concentrations. The schools' low-achiever and minority concentrations are substantially correlated (r = .68). Controlling for the schools' minority concentration, the correlation between the involvement level and low-achiever concentration is reduced from .27 to .08. On the other hand, the involvement level still correlates significantly with minority concentration (r = .19) after the effect of the schools' concentration of low-achievers is removed. In contrast, involvement level correlates only r = .08 with school poverty. To further demonstrate how the demographic characteristics of schools are related to the involvement measure, Table 11-7 provides means for the schools by enrollment size, by minority concentration, and by poverty concentration, separately. Examination of these data discloses a trend for schools with high minority concentrations to have a higher level of parent/community involvement. This tendency in part reflects school efforts in stimulating the interests of parents of minority students who might otherwise be less enthusiastic about getting involved. As in the case of district size, the larger schools on the average show a greater level of parent/community involvement in their programs than do the smaller schools. No sizeable differences are found among schools of different poverty concentrations, as already suggested by the low correlation.

In connection with school characteristics, it may also be seen from Table 10-3 that student mobility rate correlates positively with the extent of parent/community involvement (r = .27). In Chapter 10 we have attempted to explain this finding by the possibility of its association with urbanism. That is, schools in cities tend to have higher mobility rates and at the same time have an environment conducive to parental participation in the school. For instance, more convenient transportation and the nature of the parents' jobs may facilitate visits to the school and attendance at meetings and special events. In order to assess the plausibility of such speculation, the averages of the involvement measure for schools with various degrees of urbanism (as indicated by its location) are presented in Figure 11-1. The graph indeed shows greater averages for the schools located in large cities (having a population of 200,000 or more) than for other schools.

Referring back to Tables 10-3 and 10-4, we now recapitulate the relationships between the level of parent/community involvement and some school characteristics that describe the educational programs. The involvement measure is found to be positively correlated with the following program characteristics:

- Principal's instructional leadership (r = .26)
- Teacher's role in decision-making (r = .24)
- Student's role in decision-making (r = .28)
- Intensity of staff inservice training (r = .19)
- Individualized instruction in reading (r = .31)
- Individualized instruction in math (r = .25)

Table 11-7

Means of Parent/Community Involvement Measures by School Enrollment Size, by Minority Concentration, and by Poverty Concentration

Demographic Characteristics of Schools	Measure of Parent/Community Involvement		
	Mean	S.D.	Number of Schools
Grade 1-6 Enrollment Size			
Small (14-316)	37.30	13.16	122
Large (317-1,216)	45.28	14.59	120
Minority Concentration* (Percentage of minority students)			
0-19%	39.04	13.97	158
20-49%	40.85	11.18	39
50-79%	43.74	16.06	19
80-100%	53.46	14.57	26
Poverty Concentration* (Percentage of poverty students)			
0-20%	41.24	14.08	203
21-50%	40.48	15.52	31
51-100%	44.50	19.76	8

*These categories were adopted because they were used in Report 1 of the SES series.

- Hours of reading services offered per year (r = .22)
- Hours of math services offered per year (r = .10)

In addition, the level of involvement is positively correlated with the experience and training of the principal and the teaching staff:

- Principal's experience and training (r = .13)
- Average level of teacher's experience and training (r = .21)

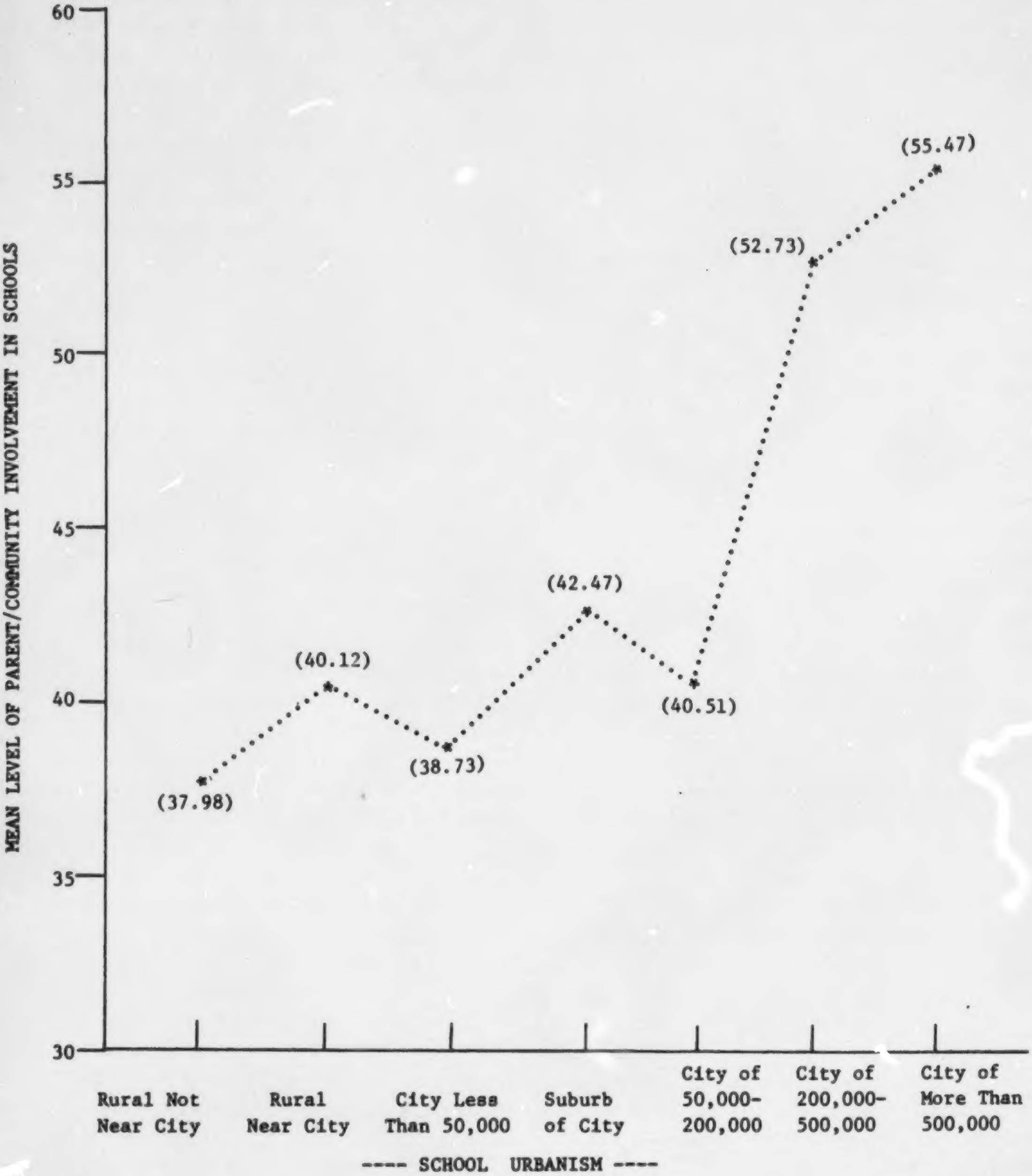


Figure 11-1

Level of Parent/Community Involvement and Urbanism of the Schools

Discussions of these relations can be found in various sections of Chapter 10. In summary, schools with high levels of parent/community involvement tend to also have all their constituents – principal, teachers, and students – actively participate in decision-making concerning instructional matters. This indicates a participatory policy of the schools that encourages collective effort in the development of programs. As many would have contended, parental and community involvement may pressure the schools into providing more in-service training to the staff, and the hiring of better qualified teachers. Though the correlations in these respects are positive, they are not sufficiently strong to support such a contention. Moreover, no causal relationship can be inferred from the correlations alone. The tendency for schools with higher levels of involvement to employ more individualized approaches in instruction and to offer more hours of instructional services could also be indicative of the results of parents' concern.

The correlation of the extent of involvement with the quality of teachers is further investigated by comparing the average level of teachers' experience and training between two groups of schools with high and low degrees of involvement, dichotomized at the approximate median of this measure in the 242 schools. To control for the possible effects of the demographic characteristics of schools, the minority and poverty concentrations were separately used as a second factor in the ANOVAs performed for this purpose. A third analysis employs receipt of CE funds as the second factor because it is expected that CE schools may utilize the funds to hire more qualified teachers for their compensatory programs. The results of these analyses reveal a complex pattern of relationships among the measures dealt with. The factors used in these analyses are attributes rather than experimentally controlled variables. They do not vary independently and the samples available are therefore quite unbalanced. With these facts in consideration, alternative analyses with the approach of partial correlation were performed. The results are easier to grasp and are presented in Table 11-8. For the computation of partial correlations, a dichotomy of receipt *vs.* non-receipt of CE funds is used, instead of the usual three receipt categories employed in other analyses. The data in the first column of Table 11-8 show that receipt of CE funds and poverty concentration do not affect the correlation between the involvement and teachers' qualification measures, while minority concentration appears to have a small effect on this correlation. Whether minority concentration is controlled or not, the correlation remains significant, indicating that the relationship cannot be entirely accounted for by the variations of the three school characteristics considered.

Two other school characteristics related to their educational programs are of particular interest here, but have not yet been examined. They are the level of intergroup relations and the amount of disruption of instruction in the school. The former measures the extent of positive interactions among different racial/ethnic groups, both for the staff and the students. The index was derived on the basis of principal and teacher perceptions. The second variable reflects the frequency of interruptions during instruction caused by discipline and violence problems. The analyses performed in order to study their relationships with the level of parent/community involvement are parallel to those described above with respect to teachers' qualifications. The results are given in the second and the third columns of Table 11-8. Again, receipt of CE funds and poverty concentration show little effect on

Table 11-8

Relationships of the Level of Parent/Community Involvement with Teachers' Qualifications, Intergroup Relations, Disruption of Instruction, and Student Mobility Rate

Variables Controlled	Simple and Partial Correlations of Parent/Community Involvement Level with:			
	Average Level of Teacher's Experience and Training	Intergroup Relations	Disruption of Instruction	Student Mobility Rate
None (simple correlation)	0.21	0.21	0.16	0.27
Receipt of CE Funds*	0.22 (-0.08)	0.21 (-0.01)	0.16 (0.03)	0.27
Poverty Concentration*	0.22 (-0.13)	0.20 (0.19)	0.15 (0.18)	0.26 (0.12)
Minority Concentration*	0.17 (0.15)	0.11 (0.38)	0.08 (0.28)	0.21 (0.24)
Combination of the Variables				
Receipt of CE and Poverty Concentration	0.23	0.21	0.15	0.26
Receipt of CE and Minority Concentration	0.18	0.11	0.08	0.21
Poverty and Minority Concentrations	0.16	0.11	0.09	0.21
Combination of all these Variables				
Receipt of CE, Poverty and Minority Concentrations	0.16	0.11	0.08	0.21

*Entries in parentheses are simple correlations of the controlled variable (column variable) with the row variables.

the relationship between involvement and intergroup relations. However, minority concentration has a sizeable effect on the relationship. It reduces the correlation from .21 to .11, indicating that the strength of the relationship can largely be explained by the variation of minority concentration. After the contribution of minority concentration is removed, the correlation is barely significant at the .05 level. A similar finding is obtained for the relationship between involvement and the extent of classroom disruption. The simple correlation of .16 is reduced to a nonsignificant .08 by taking the variation of minority concentration into account. Adding receipt of CE funds and poverty concentration to the controlled list, i.e., controlled for all three characteristics, does not change the result.

Finally, the effects of the aforementioned three school characteristics on the relationship between student mobility rate and the level of involvement were also examined in terms of partial correlations. As may be seen from the fourth column of Table 11-8, minority concentration again is the only factor that slightly affects this relationship. The correlation between involvement and student mobility rate remains significant after the effect of minority concentration is removed. Thus, it seems that higher student mobility rate is somehow related to the extent of parent/community involvement, independent of school poverty and minority concentrations. In addition to its association with school urbanism, another possible explanation for this finding is that parents make an effort to become acquainted with their child's new school, and schools with higher student mobility rates are more conscientious in assisting and encouraging them to be involved in school programs. To further understand this relationship would require more specific information about participation by individual parents.

In summary, there is no strong or direct relationship between parent/community involvement and the school characteristics considered. Minority concentration appears to mediate the relationship of the level of involvement with the intergroup relations index and the amount of disturbance in instruction. In passing, it may be remarked that in spite of the wish of some that parent/community involvement will work toward a reduction of class size and thus an increase of staff per 100 students, the correlation of involvement and the staff/student ratio is negligible (r = -.04). The next section will deal with the interrelations of parental involvement and student characteristics, including achievement.

Relationship Between Parental Involvement in Child's Education and Student Characteristics. Intercorrelations between the student-level measure of parental involvement in child's education and some selected student characteristics were presented earlier in Table 3-3. The non-trivial correlations are repeated below:

Correlation of parental involvement with:

- Majority status (Caucasian/Whites) (r = .15)
- Proxy of family economic status as described in Chapter 2 (r = .29)
- Early childhood experience in schooling (r = .13)

- Reading achievement percentile rank in Fall, 1976 (r = .16)

- Math achievement percentile rank in Fall, 1976 (r = .13).

It is worth noting that, at the school level, schools with a higher minority concentration tend to show a greater degree of collective involvement by parents and community members, whereas at the student level, a reversal of the relationship is found. There is a weak tendency for parents of majority children to be individually involved more often in their child's education than parents of minority children. Another noticeable point is that while student-level data indicate an appreciable and positive correlation (.29) between the proxy of family economic status and involvement, the correlation obtained with school-level data is comparatively small (.08). Regarding the relationship of achievement with the level of parental involvement, the reader is cautioned against drawing any causal inferences on the basis of the detectable but weak correlations. No insight on the possible causal relation between involvement and achievement can be provided until longitudinal analyses of the achievement data are performed.

In what follows, the extent of parental involvement in the child's education is further examined in relation to the students' CE selection status, family economic status, and racial/ethnic background. The means for the six groups of students classified according to their CE selection status are given in Table 11-9, by grade level. For the present analysis, joint selection status for reading and math is used. The overall average of this measure is quite low (1.83), considering the possible maximum score of 12. The bottom row of the table shows a weak overall trend of decreasing involvement with grade levels. The last column indicates that, combining all grades, CE selectees in Other-CE schools have a slight advantage of higher average parental involvement. This trend is found for grades 2-5. On the whole, the differences are not substantial among the six CE selection groups. That the extent of parental involvement declines gradually at the upper grades may be another hint of greater involvement by parents at their child's entrance to a new school and at the early stage of the child's schooling.

Table 11-10 describes the level of parental involvement by family economic status and racial/ethnic background. As may be seen from the last column, the degree of involvement typically increases with the level of family economic status. The differences among the four non-white groups are small, but parents of Caucasian/White students on the average have greater involvement in their child's schooling than do parents of the four minority groups. Within a given racial group, the pattern of relationships between involvement and family economic status follows the overall trend.

Finally, further information about the relationship of parental involvement with basic skills achievement, attitudes towards learning and school, and the amount of summer exposure to educationally related activities is provided in Table 11-11. Consistent with the correlational results, typically there is a monotonically increasing relation between student standing in basic skills achievement and the degree of parental involvement. In contrast, there is little or no relationship between involvement and the attitudinal measure. The association between involvement and the amount of intellectual activities during summer months is quite weak, though a slightly greater average of involvement is associated with more summer intellectual experience.

Table 11-9

Parental Involvement in Child's Education by CE Selection Status and Grade

CE Selection Status		Grade 1	2	3	4	5	6	Total
Title I Selectee in Title I Schools	Mean	1.72	1.66	1.44	1.55	1.51	1.30	1.54
	S.D.	1.62	1.65	1.60	1.68	1.64	1.62	1.64
	N	1,906	2,076	2,189	1,859	1,733	1,387	11,150
Other-CE Selectee in Title I Schools	Mean	1.82	1.92	1.70	1.56	1.60	1.03	1.62
	S.D.	1.56	1.71	1.65	1.48	1.59	1.47	1.61
	N	860	899	756	728	692	752	4,687
Other CE Selectee in Other-CE Schools	Mean	2.41	2.68	2.31	2.16	1.93	1.36	2.14
	S.D.	1.73	1.87	1.82	1.83	1.79	1.64	1.83
	N	573	632	610	566	582	614	3,577
Non-Selectee in Title I Schools	Mean	2.12	1.91	1.82	1.80	1.77	1.57	1.84
	S.D.	1.71	1.70	1.67	1.68	1.65	1.63	1.68
	N	6,644	5,390	5,185	5,271	5,504	5,895	33,889
Non-Selectee in Other-CE Schools	Mean	2.41	2.48	2.10	2.02	1.84	1.32	1.96
	S.D.	1.67	1.73	1.67	1.68	1.63	1.48	1.68
	N	2,878	2,477	2,574	2,527	2,660	4,347	17,463
Non-Selectee in Non-CE Schools	Mean	2.10	2.00	2.23	2.08	1.93	1.28	1.90
	S.D.	1.72	1.70	1.81	1.73	1.77	1.47	1.72
	N	1,302	1,151	1,217	1,212	1,287	1,682	7,851
Total	Mean	2.12	2.03	1.87	1.84	1.76	1.40	1.83
	S.D.	1.70	1.74	1.70	1.69	1.56	1.57	1.69
	N	14,163	12,625	12,531	12,163	12,458	14,677	78,617

In closing, it is noted that the relationship of parental involvement in the child's education with practical achievement is similar to that with basic skills achievement due to the substantial correlation between the two achievement scores (in the .60's).

Parental Involvement and Receipt of Instructional Services

Intercorrelations of the level of involvement in the child's education by individual parents, with the total hours of reading and math services received by their child in the school year 1976-77, as well as hours of services received in each of the ten specific instructional settings, were given in Table 3-3. There, data from all six grades were combined for the computation of the correlations. Almost all of those correlations are very low (less than .10) in magnitude. The largest correlation was .09, with total hours of reading services. Since hours of instruction received, particularly in reading, vary with grades, we have attempted to determine if any relationship between receipt of services and individual parental involvement exists within each grade. Such within-grade analyses still do not reveal any significant relationship.

Table 11-10

Parental Involvement in Child's Education by Family Economic Status and Race/Ethnicity

Proxy of Family Economic Status		Race/Ethnicity					
		Caucasian/ White	Hispanic	Black/ Negro	Asian or Pacific Islander	American Indian or Alaskan Native	Total
Low	Mean	1.32	1.13	1.32	0.91	1.47	1.28
	S.D.	1.49	1.47	1.66	1.40	1.42	1.55
	N	10,518	4,714	8,948	222	380	24,782
Medium	Mean	1.91	1.61	1.61	1.13	1.59	1.86
	S.D.	1.65	1.60	1.65	1.38	1.58	1.65
	N	24,592	1,273	3,053	330	241	29,489
High	Mean	2.39	2.16	2.07	1.65	2.14	2.35
	S.D.	1.71	1.61	1.71	1.64	1.64	1.71
	N	22,033	472	1,243	507	91	24,346
Total	Mean	1.99	1.30	1.45	1.33	1.60	1.83
	S.D.	1.69	1.54	1.68	1.54	1.52	1.69
	N	57,143	6,459	13,244	1,059	712	78,617

In Chapter 10, the school-level measure of parent/community involvement was correlated with the average total hours of services offered to students. Some positive correlations (.22 for reading and .10 for math) were obtained. The school-level composite covers a broad area of related activities, including school promotional activities and parental participation in decision-making among them. To further explore the school-level relationship it is now examined in terms of an aggregated measure of individual parental involvement for each school. This measure is thought to be a more direct index of involvement by individual parents in the school. The analyses were performed separately for each grade so that the variations of services offered or received across grades are controlled. However, the aggregated index was obtained for the entire school. Intercorrelations were computed for the schools' average level of parental involvement with the total hours of services offered, total hours of services received, and the ten specific service profile items. Few of these correlations turn out to be significant and the pattern of the significant results is inconsistent across grades. In order to provide the readers with a sample of the results, correlations of the aggregated involvement index with the total reading and math services offered, as well as received, are presented in Table 11-12. Interestingly, the only two significant correlations found are negative, in contradiction to the positive correlations obtained in Chapter 10. Two confounding factors play some role here: Table 10-4 used an average of services offered for the six grades combined and a different parental involvement measure.

Table 11-11

Parental Involvement in Child's Education in Relation to Basic Skills Achievement, Affective Measure, and Summer Activities

Measures of Achievement, Attitude and Summer Experience	Parental Involvement in Child's Education: Mean	S.D.	Number of Students
Basic skills achievement percentile rank			
Bottom quarter	1.56	1.67	19,493
Second quarter	1.77	1.68	18,646
Third quarter	1.97	1.67	17,483
Top quarter	2.30	1.67	18,316
Attitude towards learning and school (Affective Measure)* Score Range:			
0-64	1.89	1.69	14,554
65-78	1.85	1.67	14,425
79-92	1.83	1.67	15,082
93-112	1.79	1.71	15.243
Summer Intellectual Experience Score* Score Range:			
0-2	1.61	1.65	16,637
3-5	1.81	1.66	18,741
6-119	1.98	1.71	24,405

*The groupings of these two scores are based on inspections of their frequency distributions and need not be evenly divided in group sizes.

Failing to detect any substantial relationship between involvement and receipt of services, we finally attempted to compare the average hours of services received, for each of the ten specific profile items, between two groups of schools with high and low values of the aggregated involvement index. The index was dichotomized at the median (1.5). For illustrative purposes, the means for the ten reading service items are plotted in Figure 11-2 for grade 6 by involvement level. Similar data for math are plotted in Figure 11-3. As shown in these figures, there are small differences in the profiles of services received by the students between the two groups of schools.

Summarizing our results, we conclude that no relationship is evident between receipt of services and involvement by individual parents on the basis of aggregated data at the school

Table 11-12

School-Level Correlations of the Average Level of Parental Involvement with the Amount of Instructional Services Offered and Received*

Type of Services	Grade					
	1	2	3	4	5	6
Total hours of Reading Services in 1976–1977						
Offered	-0.01	0.03	-0.02	0.02	-0.04	0.07
Received	0.02	0.05	0.00	0.05	-0.01	0.10
Total hours of Math Services in 1976–1977						
Offered	-0.14**	-0.08	-0.14**	-0.04	-0.04	-0.02
Received	-0.10	-0.05	-0.11	-0.01	-0.01	0.03

*Number of schools varies between 193 to 214, depending on the grade level.

**Significant at 0.05 level.

level. Some may believe that such relationships exist at the student level if they were to be investigated within a particular school. However, the course service data available for the present study through bi-monthly teachers' reports, and the lack of specificity of the parental involvement measure, would not warrant the in-depth analyses required to reach a conclusion in this regard.

In summary, it is found that nearly all Title I districts (98.6 percent) in our sample have met the requirement of organizing a district-level Parent Advisory Council. In an overwhelming majority of the districts (more than 90 percent), the PACs are involved in planning the programs, and are provided with some relevant training by their districts.

At the school level, all schools, CE or non-CE, have engaged in at least one activity to promote parental involvement in their programs. The data obtained do not support the expectation that Title I schools have a greater level of parent/community involvement than other schools. The relationships of the level of parent/community involvement with school and program characteristics are generally weak. One finding worth noting is that student mobility rate and degree of urbanism of the school are related to the involvement level. Schools with higher mobility rates, and schools in the city, on the average have a greater level of parent/community involvement.

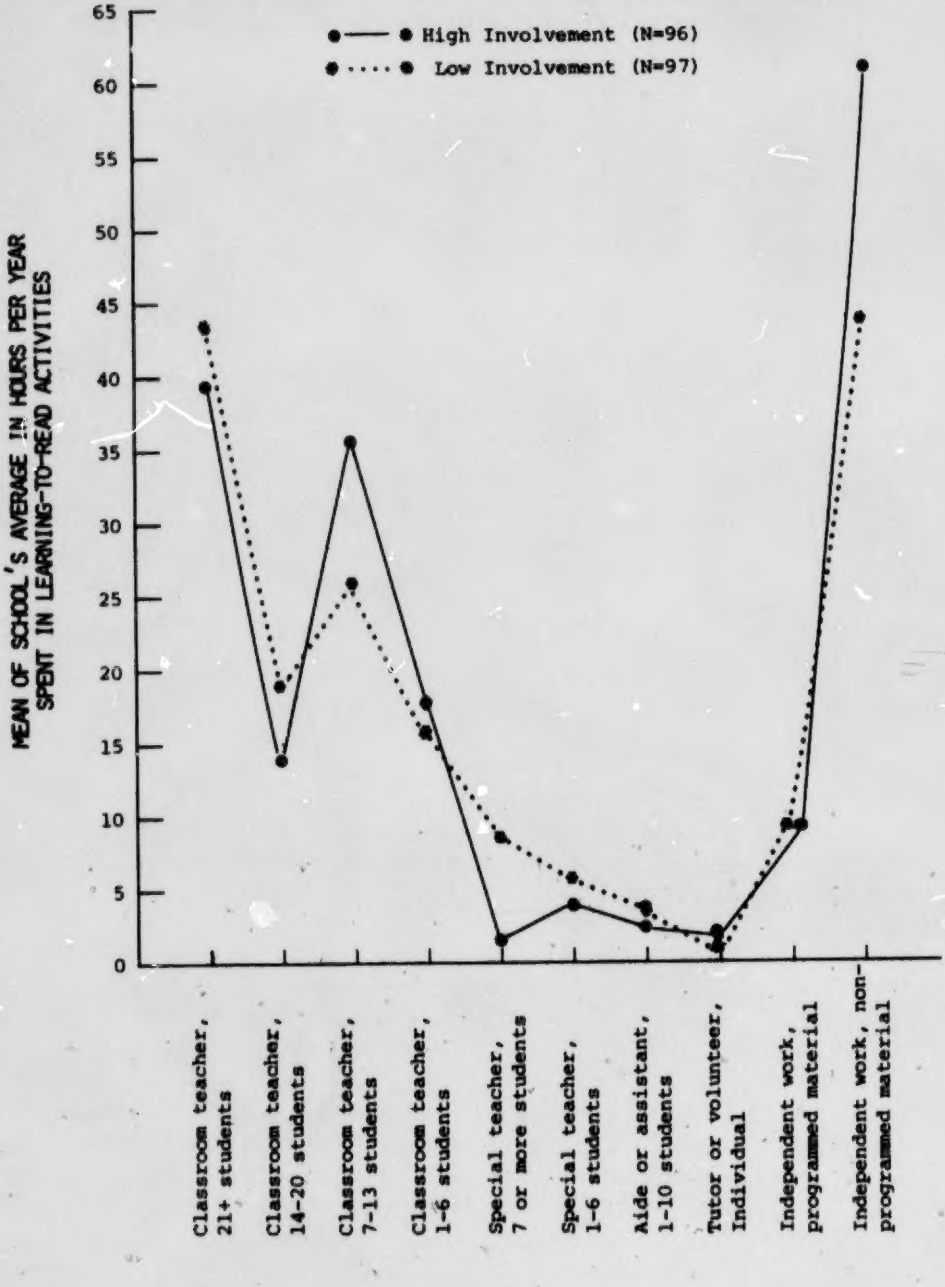


Figure 11-2

Reading Services Received by Students in Grade 6, for Schools with High or Low Individual Parental Involvement

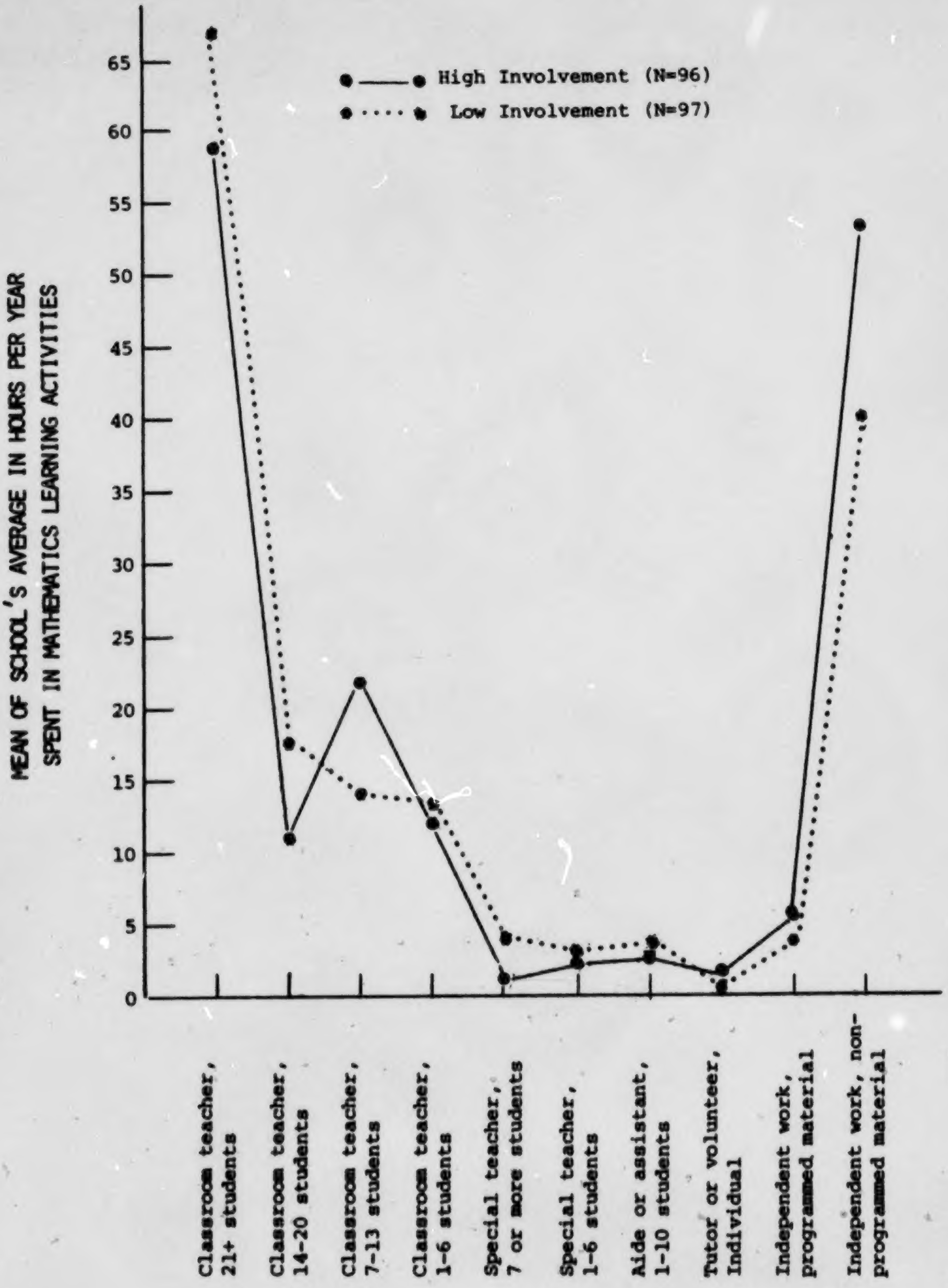


Figure 11-3

Mathematics Services Received by Students in Grade 6, for Schools with High or Low Individual Parental Involvement

At the student level, there is a tendency for the parents of Caucasian/White students, and families of higher economic status to participate in more school activities. Parents of students with higher achievement also tend to have a greater involvement in their child's education. With respect to reading and math instructional services provided to and received by the students, little or no relationship has been established between them and the schools' average level of individual parental involvement.

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GLOSSARY OF TERMS USED IN TEXT AND TABLES

This glossary is provided for the reader who wants quick reference to the specific meanings of non-obvious terms used in this report. Because the terms are so specific and are coined to reflect extant governmental policies and regulations, they are frequently defined according to the way they were operationalized for analysis in this report. Through these definitions it is hoped that the reader will be able to make more accurate interpretations of the findings in this report. More detailed information will be found in Report 9 of the Sustaining Effects Study.

Ability Grouping. A composite measure of the extent of grouping of students for instruction on the basis of ability. Principals' responses to items of PQB and school aggregates of Teachers' responses to TQA, TQB, and TQC comprised this composite.

Additional Reading and Math Personnel. Five types of personnel were reported on an hours-per-week basis by teachers on items of TQB and TQC. These are special teacher, teaching aide, volunteer, student teacher, and student tutor. Counselor/psychologist, speech therapist, and media specialist were reported on an hours-per-month basis. All eight types of data were aggregated to the school level. The approximate range for both types of variables is 0-4 hours per week/month.

Allocation of Title I Funds. Four methods describing the use of Title I funds in the district are listed in an item of DCHB. The categorical responses were obtained from the superintendents.

Amount of Structure in Instruction. This composite index was obtained from responses of teachers to items of TQB and TQC. The indices for all teachers in each school were then aggregated for school-level analysis. The index primarily reflects the use of lesson plans and feedback by teachers.

Attitude toward Learning and School. Total and raw scores earned on the three sub-scales of the SAM. The sub-scales are named "Attitude toward Reading," "Attitude toward Math," and "Attitude toward School."

Audio-Visual Exposure. Teachers' responses to items of TQB and TQC were scaled to indicate monthly frequency of total exposure to equipment. The measures were aggregated to the school level when schools were the units of analysis.

Average Hours of Reading/Math Attended per Week. See: Weekly Hours of Instruction.

Average Per-Pupil Expenditures. Total Current, Title I, and Other CE per-pupil expenditures are reported. Each of these was obtained from business managers' dollar responses to the DEX divided by ADA for regular expenditures and by the number of CE selectees in the school for CE expenditures.

Basic Skills Score (BSS). A basic skills achievement percentile was obtained from combined de-biased reading and math raw scores.

Belief that School Affects Achievement. The composite was constructed from principals' responses to PQA items and school aggregates of teacher responses to items of TQA, TQB, and TQC. The items all concerned the respondents' viewpoints on whether school practices can affect student achievement.

CE Selectees. Students were dichotomized into CE selectees and non-selectees in reading or math according to the CER. Students marked as being selected to receive reading or math compensatory services were classified as CE selectees.

CE Selection Status. See: Selection for CE Services.

Class Composition. See: Percentage of CE Students in Reading/Math Classes.

Class Size (Reading/Math). Teachers reported typical class sizes on TQB and TQC. These data were extended to student records for analytical purposes. Range: 1-38.

Community Activities. In addition to instructional programs for students, some CE programs provide funds for community activities that are designed to involve parents and the community in the school, improve race relations, or increase the relevance of schooling.

Control of School Program. The extent of district control of school programs is reflected in a weighted sum of superintendents' responses to five items in DCHA. Range: 0-8.

Discontinuation of CE. Any student who was reported by his/her teacher to have received CE services in 1975-76, but not in 1976-77, was categorized as having CE discontinued. Teachers also indicated reasons for discontinuation, such as CE fund cut-backs, student no longer qualified, etc.

Disruption of Instruction. A composite index indicating the extent of classroom disruptions caused by problems of discipline and violence. The index is obtained from Principals' responses to PQA and school aggregates of Teachers' responses to TQA.

District Allocation Pattern. Districts' allocation policies for non-Title I CE funds came directly from superintendents' responses to DCHB, and were combined with the student CE selection category from the CER to form ten categories. Districts were then classified as receiving only Title I funds, 'layering' CE services, or 'spreading' CE services. The expression 'Layer CE Services' indicates that non-Title I funds are used mostly to provide *additional* services to students already receiving Title I services. The expression 'Spread CE Services' indicates that non-Title I funds are used mostly to provide services to low-achieving students not receiving Title I services.

District Title I Allocation Procedure. Six allocation categories were obtained directly from the superintendents' responses to items of DCHB. The categories indicate how the districts determine the amount of Title I funds available to participating schools.

District Control of Instruction. The composite describes the extent of the district's control over school programs and participation in instructional decision-making. Superintendents' responses to DCHA, principals' responses to items of PQB, and aggregated teachers' responses to items of TQA, TQB, and TQC comprised this measure. Range: 13-54.

District Percentage of Poverty Students. District's percentage of students meeting Title I poverty criteria was obtained from superintendents' response to an item of DCHB. Sometimes it is called "District Poverty Concentration." For tabulations it was often divided into three categories: low (0-13%); medium (14-25%); and high (26-100%) of approximately equal numbers of districts.

District Poverty Level. Three levels of district-wide economic status were used for stratification in the sample selection, based on the district's percentage of children in families below the 1970 poverty level. Thus, the percentages were 22.0-88.1% for high, 11.9-21.9% for medium, and 0.2-11.8% for low-poverty districts.

District CE Receipt Category. The business managers' dollar expenditure responses to the District Expenditure Questionnaire were used to classify districts into Title I and non-Title I categories.

District Size. Three levels of district enrollment were designed as a surrogate for population density, and used for stratification in sample selection. All districts were assigned to three groups so that each group contained approximately one-third of the nation's students, age 5-17. As a result, the enrollments were 1-4,535 for small, 4,536-18,229 for medium, and 18,230-721,043 for large districts.

Early Childhood Educational Experience. A dichotomous index for each student reflecting whether or not he/she attended kindergarten, pre-kindergarten, Head Start, summer school, nursery school, day-care center, or pre-school.

Economic Status. A weighted index for each child, based on responses to items regarding receipt of free or reduced-price lunch or breakfast, and the educational level of parents. The index is expressed as a percentage of the Orshansky poverty level, and ranges from 46 to 427.

Educational Approach Emphasized by Schools. The approaches used by schools in the districts were indicated by responses of superintendents to an item of the DCHA.

Eligibility for Title I. District superintendents answered questions about how the district determined school eligibility for participation in Title I. They also answered questions on how student eligibility was determined.

Emphasis on Teacher Training. A composite obtained primarily from principals' responses to items in PQA and PQB as well as school aggregates of teachers' responses to an item in TQA. Range: 2-214.

Feedback. The frequency and intent of each teacher's method for informing students of their educational progress. The responses were obtained from the Teacher Questionnaires and transferred to student records for analysis. Range: from 0 to 90 times per semester.

Frequency of Changes in Sub-groups. Teachers' responses to items of TQB and TQC were placed on a 0-38 times-per-year scale, then aggregated to the school level.

Geographic Region. Ten regions defined by the ten Standard Federal Regions (U.S. Government Manual). The regions were initially used for stratification in sample selection. (See Figure 2-I.)

Guidance and Counseling CE Service. Teachers' responses to an item in SBC for each student about whether the student received CE guidance and counseling provided by a specialist.

Health and Nutrition CE Service. Teachers' responses to an item in SBC for each student about whether the student received CE health and nutrition services.

Individualized Reading/Math Approach. This variable reflects teachers' responses to items of the Teacher Questionnaires aggregated to the school level. It reflects the degree of individualization of instruction in the school.

Instructional Services Received (Reading and Math). Total hours of reading/math attended per year was categorized into ten hourly components based on percentages reported for each student by the teacher. The components are:

Instructor	Number of Students in Group	Observed Range	
		Reading	Math
Regular Teacher	21 or more	0-540	0-470
Regular Teacher	14-20	0-540	0-450
Regular Teacher	7-13	0-522	0-415
Regular Teacher	1-6	0-459	0-415
Special Teacher	7 or more	0-277	0-533
Special Teacher	1-6	0-429	0-295
Paid Aide	1-10	0-394	0-335
Individual Work With Tutor		0-173	0-141
Independent Work With Programmed Material		0-318	0-227
Independent Work With Non-Programmed Material		0-421	0-283

Intensity of Staff Training. This measure was based on principals' reports about the percentage of staff receiving training and the amount of training received during the summer and school year (1976-77).

Intergroup Relations. A composite index of racial mixing and relationships among teachers and among students, obtained from principals' responses to the Principal Questionnaire and school aggregates of teachers' responses to the Teacher Questionnaire.

Low-Achieving vs. Regular-Achieving Students. Low-achieving students in reading/math were defined in this report as those scoring at or below the 33rd percentile on the CTBS norms computed from the non-debiased raw scores. All other students were classified as regular-achieving students.

Low-Medium-High Classifications. The low/medium/high classifications for student characteristics were based on a division of the student sample into approximate thirds. A similar division was made for the none/low/high classifications.

Majority/Minority Status. Non-Hispanic Caucasian/White was classified as majority. All others were classified as minority.

Non-Public Schools. No attempt was made in this study to determine the nature of sponsoring agencies for the non-public schools with students participating in Title I.

Number of Activities Used to Promote Parental Involvement. Principals' responses to a multiple-response item in PQB were counted to obtain this number.

Number of Years District has Participated in Title I. This number is obtained by counting the number of years for which the district business manager indicated that the district participated in Title I in an item of the DEX. The years span from 1965 to 1977.

Overall Testing Frequency. The superintendents indicated the annual frequencies of district-wide achievement testing for each grade level in DCHA. The frequencies were then averaged over the grade levels for the overall frequency. Range: 0-3.

Parent/Community Involvement. A composite index obtained from principals' responses to items of PQA and PQB, and teachers' responses to items of TQB and TQC aggregated to the school level. This index reflects a wide range of activities related to participation of parents and community members in the schools' educational programs.

Parent Education. Teacher estimates of the father's and mother's educational level for each student were recorded on the SBC. These estimates were aggregated to the school level for analytical purposes.

Parental Involvement. An index for each student that reflects the frequency of parents' participation in a variety of school activities, and their meetings with teachers to discuss their child's problems and progress.

Percentage of CE Students in Reading/Math Classes. The percentages of CE selectees in all students associated with each teacher was obtained and then linked to his/her students' records. This percentage is termed "Class Composition" in the report.

Percentage of Eligible Schools Receiving Title I Funds. This percentage is a direct response of superintendents to an item of the District Characteristics Questionnaire.

Percentage of Low-Achieving Students. For Table 10-1, the percentage of low-achieving students in a school was obtained by regarding students who scored at or below the 33rd percentile in reading *and/or* Math as low-achieving.

Percentage of Regular Achievers Selected for Reading/Math CE Services. Regular achievers were those scoring above the 33rd percentile. CE selection was obtained from the CER.

Percentage of Schools With Half-Day Sessions by Grades. Principals' responses to an item in PQA were used to obtain this index.

Percentage of Students Bused to Promote Racial Balance. The percentage was directly obtained from the principals' responses to an item of PQB. Range: 0-66.

Percentage of Students from Non-English Speaking Homes. Teacher judgments of each student's home language, recorded on the SBC, were aggregated to the school level.

Percentage of Staff that is Administrative. See: Top-Heaviness.

Percentage of Time Title I Coordinator Devotes to Title I Activities. This percentage is a direct response of superintendents to an item of DCHB.

Percentile Scores. The reading and math percentile scores were obtained by converting the non-debiased raw CTBS scores to normalized percentiles using the norms developed for the SES first year CTBS data collected from the 242 Representative Schools. Raw CTBS scores to percentile conversions are not, therefore, exactly the same as those provided by the publisher.

Performance Reviews for Teachers and Principals. Frequencies of formal performance evaluations for elementary-school principals and teachers in the district were obtained from superintendents' responses to an item of DCHA. They also indicated how the results of the reviews were used.

Per-Participant Reading/Math CE Expenditure. Expenditures for each school were obtained from business managers' responses to the DEX and then prorated to the estimated number of CE students in the school.

Per-Pupil Current Expenditure. Districts' and schools' current expenditures for education were divided by their respective ADA. The information was obtained from the DEX. The average expenditures ranged from $591 to $3,396 for districts, and from $428 to $3,396 for schools.

Placement for Regular Instruction. Nine categories of student placement into classes were responded to by principals for their schools. These data from PQA were then grouped into 3 classes (educational, arbitrary, and request) of general placement criteria.

Poor/Poverty Students. Poor or poverty students were defined as those with scores below 101 on the economic status variable. See above.

Practical Achievement. Raw scores for each student in grades 4-6 on the Practical Achievement Scale. The scale presents real-life reading/math problems with high interest and relevance for most American children, and is similar in intent to measures of functional literacy.

Principal Experience and Training. This composite index was based on principals' responses to items on PQA about their educational training and experience as teachers and principals.

Principal's Instructional Leadership. Principals' responses to items in PQA and PQB and school aggregates of teachers' responses to items in TQA, TQB, and TQC were used to construct this composite measure. It indicates the principal's role in instructional decision-making as well as his/her participation in instructional activities.

Procedures for Securing Parents' Suggestions and Complaints. Principals' categorical responses to an item of PQB were classified into informal and formal procedures.

Race/Ethnicity. The five major racial/ethnic groups are those defined by HEW for policy purposes in 1976. Each student's race/ethnicity was assigned by his/her classroom teacher on the SBC. The official groups, at the time this study was designed, were: American Indian or Alaskan native, Asian-American, Black, Hispanic, and White, non-Hispanic. (Actually, the Hispanic-non-Hispanic dichotomy was to have been applied to the first 3 and the last group for a total of 8 groups, but 3 of those groups would have had no or very few students in them.)

Rank of District's Title I Director. The ranks used in this report were taken directly from those listed in an item of DCHB.

Reading/Math Activities. The learning activities in reading and math commonly used in elementary schools. Teachers' ratings on a 1-5 scale of the frequency of use of each activity were linked to students' records for student-level analyses.

Reading/Math Level of Class. Four categories of achievement level in a class based on teachers' responses on the SBC.

Receipt of Reading/Math CE (in 1975-76 and 1976-77). Teachers' reports in SBC on whether the student received CE in reading or math for the respective school year.

Report 5 Sample. This sample consists of all students in the SES first-year Representative Sample for whom data from CER and at least one more instrument were collected.

School Climate. The composite was created from responses of principals to items of PQA and PQB and of teachers to items of TQA. The items dealt with the harmony among the staff, i.e., how well the staff works together. Range: 24-45.

School Enrollment Size. Grade 1-6 enrollments ranging from 15 to 1293 were obtained from student status reports for each school, then the median was used to dichotomize schools into small and large categories.

School Grade Span. Schools were categorized into four groups based on the grades in the 1-6 range that they operate. The four groups are full-range elementary (have all six grades), primary (mostly grades 1-4 only), elementary feeder (mostly grades 1-5 only), and intermediate and middle (mostly grades 5 and 6 only).

School Selection Criteria. Criteria used by schools for the selection of CE participants were derived from principals' responses to items of PQB.

School Funding Source. Only the two school CE receipt categories associated with compensatory services were used here. Schools without CE were excluded.

School Minority Percentage. Student information from the Student Background Checklist was aggregated to the school. Range was 0 to 100%.

School Poverty Concentration. Schools were assigned the percentage of enrolled students whose economic status was 100 or lower (see Economic Status). When schools were trichotomized, the categories were: high poverty (25% or more students at or below 100), medium poverty (10-24%), and low poverty (0-9%).

School Receipt of CE Funds. The schools were categorized in terms of the CE funds received for the provision of compensatory reading and math services to their students. The source of information was the Compensatory Education Roster.

Title I Schools	At least one student was selected for Title I reading or math services in the school. Students may or may not be selected for other CE services.
Other CE Schools	No students were selected for Title I services but at least one student was selected for reading or math compensatory services in the school from other federal, state, district, or private funds.
Non-CE Schools	No students were selected for any reading or math compensatory services in the school.

Selection for CE Services. Selection for receipt of compensatory services was determined on the basis of the coordinator's report on the CER for each student. First, schools were assigned to CE receipt categories (Title I, Other CE, No CE) and then each student was assigned to a category (Title I/Title I and Other CE, Other CE Only, and No CE) based on his/her selection status. Students were thus grouped into the six meaningful categories resulting from consideration of both school and student receipt. The categories are:

Title/Title I and Other-CE selectee at a Title I/Title I and Other-CE school

Other-CE selectee at a Title I and Other-CE school

Other-CE selectee at an Other-CE only school

Non-selectee at a Title I school

Non-selectee at an Other-CE only school

Non-selectee at a non-CE school

Students were grouped separately for reading and for math unless otherwise noted.

Service Profile. See: Instructional Services Received.

Special Equipment. Use of 'special equipment' refers to students' use of sound equipment, viewers, projectors, teaching machines, television, and related equipment.

Staff Per 100 Students (Staff/Student Ratio). A number obtained for each school as the ratio of the total number of staff to the total enrollment. The number of staff was obtained from the principal's report in PQB and the records of numbers of homeroom teachers in the school.

Student Assignment to Reading and Math Instruction. Teachers were asked to indicate on TQB and TQC if the students were assigned to them on the basis of test scores and/or teacher judgment. The data were aggregated to the school level as percentages of students assigned on the basis of achievement test scores.

Student Mobility Rate. Mobility rate was computed as a composite of responses obtained from principals to PQB. It is the sum of the percentages of students who moved into and out of the school during the school year.

Student Role in Decision-Making. This composite was based on principals' (PQB) and teachers' (TQA, TQB, and TQC) perceptions of the extent of students' participation in instructional decision-making, such as determining course content and planning or evaluating programs.

Sub-group. A general term meaning any group of students fewer than the entire classroom that is formed for the effectiveness or ease of delivering instruction. The types of sub-groups used in this report were those listed in items of TQB and TQC. For Tables 6-11 and 6-12, use of each type of sub-group by the teachers was aggregated to the school level as percentages of teachers using various types of sub-grouping.

Sub-group Selection. The categories shown in Tables 6-9 and 6-10 directly reflect categorical teacher responses to items of TQB and TQC that were aggregated to the school level as percentages.

Summer Intellectual Experience. A weighted index for each student derived from several questions on the SAS. The index considers a wide variety of activities that can be thought of as 'intellectual', but reflects mostly attendance at summer schools.

Support Personnel per 100 Teachers. This was obtained simply as the ratio of the number of support personnel (speech therapist, counselor, librarian, etc.) reported by the principal in PQB to the number of teaching personnel in the school.

Teacher Contract Issues. The issues covered in the districts' contracts with elementary school teachers were identified from responses of superintendents to an item of DCHA.

Teacher Experience and Training. This composite was created on the basis of teachers' reports in TQA about their educational training and teaching experience. Range: 2-84. Aggregates of this measure for all teachers in a school were used in the school-level analyses.

Teacher's Judgment of CE Need. Teacher's judgment on the SBC of whether the student needed CE reading and/or math services was the basis for the dichotomization of students into needy, not-needy groups.

Teacher's Role in Decision-Making. A composite index obtained from principals' responses to PQA and PQB as well as school aggregates of teachers' responses to TQA, TQB, and TQC. Range: 25-56.

Teaching Approaches. Major approaches employed in teaching reading were presented in TQB, so that each teacher could rate the extent of use of each approach.

Testing Frequency. See: Overall Testing Frequency.

Title I School Allocation Practices. Each Title I school was classified into one of the fund allocation categories based on its district superintendent's responses to an item of DCHB.

Top-Heaviness. This index is defined as the percentage of district staff that is administrative. The composition of district staff was obtained from the superintendents' responses to DCHA.

Total Hours Absent from Instruction per Year. This measure was obtained by subtracting total hours attended from total hours offered.

Total Hours of Reading/Math Attended per Year. Similar to Total Hours Offered per Year, except that an adjustment was made for each student's absences. Range: 18-567.

Total Hours of Reading/Math Offered per Year. Derived from the four estimates of hours of exposure in a typical week as reported bimonthly by the teacher, adjusted to reflect the length of the school year. Range: 36-570.

Urbanism of School. Seven categories in terms of school location were obtained from the national principal survey for Technical Report #1.

Use of Test Results for CE Selection. This was directly based on principals' reports in PQB.

Weekly Hours of Instruction in Reading/Math. Average of the four bimonthly teachers' reports on typical hours of instruction per week.

Weeks Attended per Year. Based on four bimonthly records of a student's absenteeism and adjusted by the number of days in the school year, corrected for unanticipated school closings. The range is from 6-38 weeks.

Weeks per Year of Special Reading/Math Instruction. This measure was based on teachers' responses to items in TQB and TQC and then aggregated to the school level for analyses. It reflects the length of time students receive services from special teachers.

Yearly Frequency of Title I Communications. The superintendent rated, in an item of DCHB, the frequencies of the district's use of eight methods for keeping persons informed about the district's Title I program. The ratings were summed to obtain the annual frequency.

Yearly Hours of Instruction in Reading/Math. The total number of hours of instruction in reading and in math were tabulated on the basis of teachers' responses to the bimonthly SPARs. The total hours could also be divided into time spent in each of several service configurations.

APPENDIX A: POLICY QUESTIONS ADDRESSED IN THIS REPORT

APPENDIX A: POLICY QUESTIONS ADDRESSED IN THIS REPORT

The policy questions have been paraphrased in the text of the report for reasons of style, but the reader should be able to find, without difficulty, the major heading within each chapter that expresses each policy question.

Chapter 3

- Among schools offering compensatory services, do the most needy students receive compensatory services?
- How are the characteristics of educational services received associated with student characteristics?
- How are characteristics of students related to their CE selection status?
- What student characteristics predict whether a student is selected for CE services?
- What is the pattern of concentration of compensatory services over grade level?
- Do CE selectees receive compensatory reading and mathematics services for more than one year and, if not, what is the reason for discontinuation?
- How and what kinds of Title I instructional services are delivered to students in non-public schools?

Chapter 4

- Are CE selectees instructed in basic skills by different instructors and in different group sizes for different amounts of time?
- How much of CE selectees' and non-selectees' time per week is devoted to reading and mathematics?
- What instructional approaches in reading and mathematics comprise educational programs for CE selectees and non-selectees?
- How do instructional services and learning activities differ among grade levels?

Chapter 5

- How do instructional services received by CE selectees compare to those received by non-selectees in CE schools?

- How do instructional services received by CE selectees compare to those received by students in non-CE schools?

- What, if any, activities are missed due to participation in compensatory reading and mathematics activities?

Chapter 6

- Do CE programs funded by different sources provide different instructional services?

- How do the delivery and nature of instructional services differ in schools with different CE funding sources?

- Does the distribution of CE services over grade levels vary with the funding sources of CE programs for which the student is selected?

Chapter 7

- What are the average per-pupil expenditures for Title I selectees in schools under different district allocation practices?

- What are district Title I expenditures for students in non-public schools, and how many such students are served?

Chapter 8

- How do districts interpret the mandated Title I selection criteria for schools and students to participate?

- What criteria are used by Title I schools for selection of students to participate and how are the selection policies related to the types of students actually selected to receive Title I services?

- How do procedures used to allocate Title I funds to participating schools within districts affect selection of students for Title I services in the Title I schools?

- How are students in non-public schools selected to receive Title I services and how are funds allocated to these services?

- How do schools that select a large proportion of their regular achievers for CE services differ from schools that select a low proportion?

Chapter 9

- What are the characteristics of districts that receive Title I funds and that do not receive them?

- Do some districts that qualify for Title I funds fail to obtain them, and if so, why?

- What are the characteristics of district Title I programs in participating districts?

Chapter 10

- What are the characteristics of the schools that receive and that do not receive CE funds?

- How are the characteristics of schools and their educational programs related to district characteristics?

- How are the characteristics of educational programs and CE services related to school characteristics?

Chapter 11

- How are the parents involved in district and school Title I programs and in school educational programs in general?

- What district, school, and student characteristics are related to degree of parent/community involvement?

- Are the services students receive related to their parents' involvement in the educational program?

APPENDIX B: SUPPLEMENTARY TABLES FOR CHAPTER 3

Table B-1

Percentage of Students Who are Male, by District Allocation Pattern, and by Math CE Category

District Allocation Pattern and Mathematics CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I Schools							
Districts receive only Title I funds	% Male	53.56	58.89	51.86	57.27	58.82	58.80
	N	295	270	322	227	255	250
Districts 'layer' CE services	% Male	50.68	57.99	54.59	48.72	55.56	56.25
	N	146	169	185	156	162	112
Districts 'spread' CE services	% Male	54.21	56.44	52.89	49.90	54.90	57.01
	N	463	450	501	525	439	314
Other CE only selectees							
In Title I schools	% Male	52.08	51.90	52.12	58.71	53.58	55.04
	N	768	657	566	649	558	645
In Other CE only schools	% Male	52.11	52.15	46.17	52.78	53.17	58.74
	N	355	303	392	360	410	429
Non-CE selectees in Title I schools							
Districts receive only Title I funds	% Male	50.26	51.72	50.39	48.99	49.16	50.67
	N	3088	2763	2574	2484	2488	2481
Districts 'layer' CE services	% Male	50.85	51.21	51.93	46.81	50.83	49.94
	N	1357	1283	1298	1222	1269	1784
Districts 'spread' CE services	% Male	50.38	50.49	51.24	48.95	50.55	48.77
	N	3273	2747	2664	2576	2740	2434
Non-CE selectees in Other CE only schools	% Male	50.66	49.62	49.89	50.64	50.21	50.11
	N	3091	2797	2782	2727	2820	4520
Non-CE selectees in non-CE schools	% Male	49.77	49.39	53.74	54.34	51.60	51.34
	N	1302	1146	1215	1211	1281	1681

Table B-2

Percentage of Students Who are Minority, by District Allocation Pattern, and by Math CE Category

District Allocation Pattern and Mathematics CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I Schools							
Districts receive only Title I funds	% Minority	43.48	37.36	40.91	26.20	19.77	16.21
	N	299	273	330	229	258	253
Districts 'layer' CE services	% Minority	63.51	52.35	56.84	52.23	56.02	41.07
	N	148	170	190	157	166	112
Districts 'spread' CE services	% Minority	79.83	67.74	84.45	78.73	83.94	86.56
	N	481	465	521	550	442	320
Other CE only selectees							
In Title I schools	% Minority	44.61	47.03	39.79	35.61	38.11	35.79
	N	789	674	583	660	572	665
In Other CE only schools	% Minority	47.75	45.62	39.31	51.89	50.12	50.23
	N	377	320	407	370	417	436
Non-CE selectees in Title I schools							
Districts receive only Title I funds	% Minority	14.08	14.85	12.58	12.94	11.31	10.72
	N	3210	2889	2671	2588	2565	2555
Districts 'layer' CE services	% Minority	27.03	25.78	28.37	27.62	30.16	22.55
	N	1432	1338	1364	1271	1313	1845
Districts 'spread' CE services	% Minority	46.00	50.33	50.62	49.18	49.32	44.59
	N	3474	2895	2837	2731	2885	2516
Non-CE selectees in Other CE only schools	% Minority	18.45	17.17	16.74	20.26	18.77	15.45
	N	3208	2924	2849	2818	2909	4614
Non-CE selectees in non-CE schools	% Minority	35.30	30.14	26.03	24.80	25.76	20.85
	N	1371	1191	1260	1250	1316	1727

Table B-3

Mean Student Economic Status by District Allocation Pattern, and by Math CE Category

District Allocation Pattern and Mathematics CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I Schools							
Districts receive only Title I funds	Mean	158.86	165.72	178.62	183.19	174.17	194.12
	S.D.	78.14	83.97	82.79	85.62	84.55	85.03
	N	296	271	323	227	255	250
Districts 'layer' CE services	Mean	156.84	170.21	179.01	167.79	176.72	168.54
	S.D.	74.89	75.61	77.35	80.37	83.93	76.86
	N	146	169	188	156	162	112
Districts 'spread' CE services	Mean	137.77	164.88	138.93	149.87	151.83	149.55
	S.D.	71.39	88.66	63.71	67.37	68.48	62.18
	N	465	451	502	527	439	314
Other CE only selectees							
In Title I schools	Mean	194.50	184.42	197.04	186.41	190.79	191.07
	S.D.	82.06	78.49	81.62	86.53	82.03	82.68
	N	769	658	567	650	560	646
In Other CE only schools	Mean	224.47	223.29	221.33	201.12	203.43	197.99
	S.D.	99.29	97.60	99.58	93.82	89.54	84.69
	N	355	305	392	362	410	431
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	235.35	239.08	235.43	234.09	239.35	245.14
	S.D.	83.88	81.38	84.24	84.31	83.06	80.51
	N	3094	2771	2576	2491	2492	2486
Districts 'layer' CE services	Mean	228.32	229.69	227.04	219.80	218.30	237.90
	S.D.	86.17	86.21	83.52	90.08	91.05	87.89
	N	1358	1289	1307	1226	1276	1789
Districts 'spread' CE services	Mean	209.02	202.94	201.62	202.80	194.83	206.55
	S.D.	89.73	90.33	90.63	88.92	87.69	90.92
	N	3282	2756	2667	2581	2745	2437
Non-CE selectees in Other CE only schools	Mean	72.69	276.96	273.46	269.15	269.32	269.81
	S.D.	81.40	79.00	80.44	83.19	81.38	74.76
	N	3096	2804	2792	2731	2832	4530
Non-CE selectees in non-CE schools	Mean	46.85	248.70	258.18	263.81	261.66	262.02
	S.D.	83.77	82.38	83.03	84.01	86.11	75.01
	N	1302	1151	1217	1212	1287	1682

Table B-4

Percentage of Students Who had Some Form of Early Childhood Schooling by District Allocation Pattern, and by Math CE Category

District Allocation Pattern and Mathematics CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I Schools							
Districts receive only Title I funds	%	76.98	82.90	77.74	74.44	74.90	74.19
	N	291	269	310	223	251	248
Districts 'layer' CE services	%	92.41	84.94	77.96	77.63	84.62	65.77
	N	145	166	186	152	156	111
Districts 'spread' CE services	%	91.15	91.74	89.25	85.02	88.32	87.70
	N	452	436	493	494	428	309
Other CE only selectees							
In Title I schools	%	93.65	95.20	92.86	87.62	81.93	84.79
	N	756	646	560	638	548	618
In Other CE only schools	%	96.88	97.63	95.09	93.43	92.44	86.80
	N	352	295	387	350	397	394
Non-CE selectees in Title I schools							
Districts receive only Title I funds	%	91.82	91.68	88.50	86.82	85.63	81.18
	N	3055	2715	2531	2435	2429	2449
Districts 'layer' CE services	%	91.56	88.86	90.82	87.52	81.10	81.08
	N	1339	1257	1274	1170	1233	1755
Districts 'spread' CE services	%	93.27	92.59	88.96	87.38	86.69	85.62
	N	3222	2657	2609	2528	2689	2378
Non-CE selectees in Other CE only schools	%	96.41	96.16	93.04	93.15	89.11	83.81
	N	3063	2732	2746	2685	2774	4405
Non-CE selectees in non-CE schools	%	95.09	94.82	92.92	92.16	91.70	88.86
	N	1283	1139	1201	1186	1265	1651

Table B-5

Mean Parental Involvement, by District Allocation Pattern, and by Math CE Category

District Allocation Pattern and Mathematics CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I Schools							
Districts receive only Title I funds	Mean	1.82	1.66	1.59	1.70	1.35	1.25
	S.D.	1.66	1.70	1.62	1.73	1.54	1.50
	N	296	271	323	227	255	250
Districts 'layer' CE services	Mean	1.75	1.63	1.50	1.50	1.30	0.91
	S.D.	1.34	1.68	1.48	1.77	1.52	1.40
	N	146	169	188	156	162	112
Districts 'spread' CE services	Mean	1.49	1.65	1.04	1.40	1.62	1.36
	S.D.	1.63	1.70	1.40	1.67	1.74	1.64
	N	465	451	502	527	439	314
Other CE only selectees							
In Title I schools	Mean	1.70	1.80	1.56	1.42	1.55	1.10
	S.D.	1.59	1.68	1.66	1.47	1.63	1.45
	N	769	658	567	650	560	646
In Other CE only schools	Mean	2.51	2.95	2.42	2.20	1.87	1.50
	S.D.	1.85	2.06	1.82	1.93	1.78	1.70
	N	355	305	392	362	410	431
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	2.26	2.01	2.00	1.99	2.09	1.61
	S.D.	1.67	1.62	1.62	1.66	1.59	1.55
	N	3094	2771	2576	2491	2492	2486
Districts 'layer' CE services	Mean	2.12	2.17	1.83	1.84	1.51	1.42
	S.D.	1.74	1.83	1.69	1.71	1.61	1.54
	N	1358	1289	1307	1226	1276	1789
Districts 'spread' CE services	Mean	1.91	1.62	1.55	1.55	1.53	1.54
	S.D.	1.70	1.66	1.67	1.64	1.65	1.79
	N	3282	2756	2667	2581	2745	2437
Non-CE selectees in Other CE only schools	Mean	2.40	2.47	2.10	2.03	1.85	1.31
	S.D.	1.66	1.72	1.68	1.68	1.64	1.48
	N	3096	2804	2792	2731	2832	4530
Non-CE selectees in non-CE schools	Mean	2.10	2.00	2.23	2.08	1.93	1.28
	S.D.	1.72	1.70	1.81	1.73	1.77	1.47
	N	1302	1151	1217	1212	1287	1682

Table B-6

Mean Summer Intellectual Experience by District Allocation Pattern, and by Math CE Category

District Allocation Pattern and Mathematics CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I Schools							
Districts receive only Title I funds	Mean	NA	8.41	11.30	8.44	9.64	10.06
	S.D.	NA	16.21	20.01	13.09	16.07	15.06
	N	NA	261	307	219	246	245
Districts 'layer' CE services	Mean	NA	5.95	9.22	9.18	13.37	4.80
	S.D.	NA	12.91	17.21	15.90	18.03	6.45
	N	NA	147	170	157	160	110
Districts 'spread' CE services	Mean	NA	8.75	10.69	15.76	14.45	11.28
	S.D.	NA	16.22	17.62	22.60	21.84	17.61
	N	NA	437	500	513	412	298
Other CE only selectees							
In Title I schools	Mean	NA	13.72	12.39	13.99	12.83	12.27
	S.D.	NA	20.01	18.66	21.80	18.06	19.79
	N	NA	614	517	620	530	630
In Other CE only schools	Mean	NA	17.24	17.48	16.67	12.49	12.18
	S.D.	NA	20.53	21.26	23.77	19.25	19.22
	N	NA	237	328	361	397	419
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	NA	7.37	8.13	7.70	7.35	6.44
	S.D.	NA	13.60	13.55	11.75	11.15	9.62
	N	NA	2686	2487	2446	2422	2438
Districts 'layer' CE services	Mean	NA	7.55	8.82	10.62	7.97	6.62
	S.D.	NA	13.53	15.02	16.89	13.33	10.66
	N	NA	1148	1167	1196	1242	1777
Districts 'spread' CE services	Mean	NA	6.71	8.36	9.01	8.36	7.16
	S.D.	NA	12.55	14.70	15.53	14.45	12.67
	N	NA	2598	2443	2446	2617	2264
Non-CE selectees in Other CE only schools	Mean	NA	7.33	8.33	9.13	7.81	6.30
	S.D.	NA	12.19	13.58	14.15	12.14	9.38
	N	NA	2695	2620	2661	2774	4435
Non-CE selectees in non-CE schools	Mean	NA	8.73	10.50	10.46	8.03	7.87
	S.D.	NA	14.57	16.68	15.88	12.40	12.05
	N	NA	943	958	1178	1246	1665

Table B-7

Mean Math Achievement, by District Allocation Pattern, and by Math CE Category

District Allocation Pattern and Mathematics CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I Schools							
Districts receive only Title I funds	Mean	36.15	30.45	29.04	35.60	31.32	29.98
	S.D.	23.86	24.13	23.00	24.70	21.80	22.05
	N	273	260	311	220	246	245
Districts 'layer' CE services	Mean	27.37	28.98	23.14	28.19	23.94	28.20
	S.D.	21.28	23.87	21.92	20.19	18.55	20.68
	N	137	161	188	153	161	111
Districts 'spread' CE services	Mean	35.21	28.84	21.97	26.81	23.46	25.19
	S.D.	23.66	22.11	18.48	20.72	19.96	21.10
	N	440	437	507	522	412	301
Other CE only selectees							
In Title I schools	Mean	45.17	42.42	35.62	39.48	39.78	38.31
	S.D.	25.80	28.60	26.51	27.16	28.21	27.83
	N	731	626	532	626	539	634
In Other CE only schools	Mean	41.27	39.97	38.44	35.65	28.98	28.79
	S.D.	28.67	29.64	27.75	26.49	24.71	22.38
	N	361	306	389	362	404	424
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	50.21	50.00	52.04	52.85	54.74	51.16
	S.D.	28.45	27.81	27.76	27.45	27.14	28.05
	N	2968	2706	2512	2439	2416	2440
Districts 'layer' CE services	Mean	46.83	48.15	48.74	47.40	46.19	50.52
	S.D.	29.06	28.43	28.31	28.72	28.09	29.01
	N	1315	1245	1257	1193	1237	1776
Districts 'spread' CE services	Mean	48.12	47.39	44.28	47.77	44.97	46.98
	S.D.	28.71	29.05	27.57	28.53	27.65	28.23
	N	3128	2594	2553	2492	2673	2330
Non-CE selectees in Other CE only schools	Mean	54.65	58.91	58.36	56.28	56.79	55.94
	S.D.	29.38	27.38	28.16	29.29	28.35	28.80
	N	2957	2716	2657	2646	2773	4440
Non-CE selectees in non-CE schools	Mean	47.83	47.59	49.64	50.22	52.11	52.20
	S.D.	29.85	28.32	28.00	28.02	29.71	29.06
	N	1264	1104	1158	1183	1247	1659

Table B-8

Mean Practical Achievement Score, by Allocation Pattern, and by Math CE Category*

District Allocation Pattern and Mathematics CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I Schools							
Districts receive only Title I funds	Mean	NA	NA	NA	10.94	14.26	16.62
	S.D.	NA	NA	NA	5.22	5.64	5.89
	N	NA	NA	NA	219	245	245
Districts 'layer' CE services	Mean	NA	NA	NA	8.95	12.22	14.99
	S.D.	NA	NA	NA	4.67	5.30	5.97
	N	NA	NA	NA	156	161	111
Districts 'spread' CE services	Mean	NA	NA	NA	8.47	12.19	14.66
	S.D.	NA	NA	NA	4.46	5.64	6.50
	N	NA	NA	NA	521	411	298
Other CE only selectees							
In Title I schools	Mean	NA	NA	NA	11.19	15.58	17.15
	S.D.	NA	NA	NA	5.94	6.97	6.84
	N	NA	NA	NA	624	537	633
In Other CE only schools	Mean	NA	NA	NA	11.02	13.72	16.03
	S.D.	NA	NA	NA	5.37	6.15	6.20
	N	NA	NA	NA	355	400	418
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	NA	NA	NA	14.65	19.58	21.28
	S.D.	NA	NA	NA	6.27	6.07	6.04
	N	NA	NA	NA	2440	2415	2436
Districts 'layer' CE services	Mean	NA	NA	NA	13.28	17.22	21.09
	S.D.	NA	NA	NA	6.33	7.08	6.11
	N	NA	NA	NA	1191	1239	1773
Districts 'spread' CE services	Mean	NA	NA	NA	13.38	16.88	19.91
	S.D.	NA	NA	NA	6.45	6.84	6.42
	N	NA	NA	NA	2490	2672	2329
Non-CE selectees in Other CE only schools	Mean	NA	NA	NA	15.86	19.82	22.24
	S.D.	NA	NA	NA	6.63	6.25	5.63
	N	NA	NA	NA	2646	2766	4438
Non-CE selectees in non-CE schools	Mean	NA	NA	NA	14.47	19.30	21.25
	S.D.	NA	NA	NA	6.48	6.67	6.09
	N	NA	NA	NA	1180	1242	1656

*This test was not administered to students in grades 1, 2, or 3.

Table B-9

Mean Affective Score*, by Allocation Pattern, and by Math CE Category

District Allocation Pattern and Mathematics CE Category		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Title I selectees in Title I Schools							
Districts receive only Title I funds	Mean	NA	84.82	81.82	76.27	76.13	68.58
	S.D.	NA	21.19	20.93	19.40	19.42	18.90
	N	NA	249	296	217	245	238
Districts 'layer' CE services	Mean	NA	87.83	84.38	80.38	78.16	77.46
	S.D.	NA	17.76	19.66	18.49	18.62	18.54
	N	NA	152	189	154	159	109
Districts 'spread' CE services	Mean	NA	81.73	87.37	82.58	84.55	81.65
	S.D.	NA	21.06	18.59	19.94	17.90	18.52
	N	NA	419	479	499	406	287
Other CE only selectees							
In Title I schools	Mean	NA	80.48	80.27	78.31	77.26	74.14
	S.D.	NA	20.37	21.29	18.97	18.60	19.83
	N	NA	582	503	608	513	606
In Other CE only schools	Mean	NA	79.85	82.71	78.79	78.49	75.75
	S.D.	NA	21.60	20.46	19.82	18.13	19.03
	N	NA	300	380	358	393	417
Non-CE selectees in Title I schools							
Districts receive only Title I funds	Mean	NA	79.54	79.47	77.16	74.39	72.72
	S.D.	NA	20.48	20.28	18.51	18.78	18.78
	N	NA	2602	2450	2404	2401	2383
Districts 'layer' CE services	Mean	NA	82.19	82.66	78.24	77.09	73.26
	S.D.	NA	20.55	19.46	19.19	18.88	18.51
	N	NA	1216	1231	1144	1228	1755
Districts 'spread' CE services	Mean	NA	83.28	84.27	78.97	80.92	77.34
	S.D.	NA	20.81	19.22	19.24	18.71	18.26
	N	NA	2456	2420	2400	2551	2224
Non-CE selectees in Other CE only schools	Mean	NA	80.24	78.95	76.94	75.70	72.79
	S.D.	NA	20.53	19.08	18.28	18.24	17.84
	N	NA	2660	2599	2625	2747	4380
Non-CE selectees in non-CE schools	Mean	NA	80.24	79.01	77.74	77.29	75.77
	S.D.	NA	20.25	20.22	18.87	19.13	19.05
	N	NA	1073	1134	1161	1221	1646

*This score can range from 0 to 112.

APPENDIX C: SUPPLEMENTARY TABLES FOR CHAPTER 5

Table C-1

Mean Hours of Reading Instructional Services Received by Selectees and Non-Selectees in CE Schools, by Achievement Level

		Low-Achieving CE Selectees						Low-Achieving Non-Selectees in CE Schools						Regular-Achieving CE Selectees						Regular-Achieving Non-Selectees in CE Schools					
Reading Service	Grade	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	N	1353	1934	1973	1722	1830	1684	3078	1814	1666	1869	2021	2530	1536	1192	1092	997	736	715	5855	5691	5774	5715	5889	7497
Total hours of reading attended during year	Mean	300	277	258	237	223	213	301	278	237	204	199	174	290	283	264	232	207	187	303	289	239	196	182	167
	S.D.	105	97	88	78	73	71	99	94	89	69	73	57	98	101	86	75	66	71	95	96	82	59	52	56
Classroom teacher 21+ students	Mean	38	27	32	34	37	29	49	46	42	36	48	44	36	31	30	29	37	31	45	41	37	41	46	49
	S.D.	59	47	55	54	57	48	68	70	66	59	64	55	54	59	55	49	53	41	63	69	59	59	58	52
Classroom teacher 14-20 students	Mean	11	9	10	13	13	13	17	13	13	22	18	19	12	13	13	14	14	14	17	20	24	20	17	16
	S.D.	34	30	29	34	32	33	48	39	37	46	35	36	38	41	35	35	31	31	47	52	65	40	35	32
Classroom teacher 7-13 students	Mean	53	54	44	39	36	33	74	65	51	41	39	25	58	74	57	49	41	37	82	74	55	41	35	25
	S.D.	59	57	54	50	46	49	70	69	65	49	50	40	58	66	57	56	48	51	74	76	60	52	47	42
Classroom teacher 1-6 students	Mean	48	44	37	30	23	24	36	38	30	21	19	16	45	33	30	24	17	19	35	32	21	14	12	11
	S.D.	54	56	43	41	34	36	52	50	43	37	34	31	54	50	43	38	31	29	52	56	37	30	27	25
Special teacher 7 or more students	Mean	11	15	16	13	13	21	1	3	2	3	2	5	12	11	12	9	9	9	1	1	1	1	0	2
	S.D.	30	30	31	28	31	43	7	13	10	14	13	19	30	29	30	26	30	28	5	7	5	9	5	9
Special teacher 1-6 students	Mean	21	28	26	26	24	21	2	5	5	5	4	4	20	19	19	19	12	14	2	1	1	1	1	2
	S.D.	38	43	39	35	37	34	11	20	19	18	19	14	37	33	35	34	27	34	10	7	8	6	7	7
Aide/assistant 1-10 students	Mean	26	20	23	16	17	14	10	8	6	4	5	2	23	17	17	13	9	7	9	6	4	2	1	1
	S.D.	36	32	33	27	29	28	26	21	18	14	17	8	33	28	28	24	20	18	24	21	13	10	8	4
Tutor/volunteer individual	Mean	4	2	2	2	2	2	3	2	2	2	1	1	3	2	2	1	2	1	3	2	1	1	1	1
	S.D.	10	8	6	7	6	6	11	9	10	6	6	5	9	7	8	5	6	5	11	8	7	5	5	3
Independent, programmed mat'l	Mean	10	9	8	9	10	11	9	11	10	8	7	9	7	7	8	9	12	12	10	13	9	8	9	9
	S.D.	30	24	20	22	22	22	30	29	29	23	21	24	21	25	22	24	25	24	29	35	26	22	24	23
Independent, non-programmed mat'l	Mean	77	68	60	56	48	46	98	88	75	60	55	49	74	77	76	64	54	43	100	99	86	66	60	52
	S.D.	55	51	45	44	42	38	66	63	60	44	41	39	55	59	53	49	42	35	64	66	57	44	41	41

Table C-2

Mean Hours of Math Instructional Services Received by Selectees and Non-Selectees in CE Schools, by Achievement Level

		Low-Achieving CE Selectees						Low-Achieving Non-Selectees in CE Schools						Regular-Achieving CE Selectees						Regular-Achieving Non-Selectees in CE Schools					
	Grade	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Math Service	N	943	946	1175	1080	1097	1056	3506	2705	2656	2694	2688	3479	945	801	687	783	642	642	6405	6163	5984	5731	6043	7233
Total hours of math attended during year	Mean	166	171	191	193	191	172	163	163	168	167	170	160	157	168	185	188	173	168	161	165	169	166	166	161
	S.D.	58	53	58	64	59	45	68	50	45	42	47	39	50	45	51	58	49	41	55	46	40	39	40	39
Classroom teacher 21+ students	Mean	46	45	57	54	49	38	62	62	65	66	66	69	37	42	51	57	57	40	64	66	70	67	73	76
	S.D.	48	48	60	54	56	46	60	52	54	53	60	59	42	47	54	53	58	50	55	54	53	54	61	60
Classroom teacher 14–20 students	Mean	11	13	11	13	11	14	14	11	13	14	14	12	17	15	13	12	9	16	14	12	11	13	12	13
	S.D.	28	28	24	30	27	32	32	25	28	29	30	29	39	33	25	31	25	32	32	28	26	30	28	30
Classroom teacher 7–13 students	Mean	16	16	18	15	22	16	13	13	12	13	15	13	18	18	21	20	21	22	11	10	12	12	16	12
	S.D.	25	27	29	31	36	32	28	31	26	28	31	30	29	30	35	42	40	39	26	28	28	27	32	32
Classroom teacher 1–6 students	Mean	15	12	15	18	17	20	11	13	10	12	15	13	13	10	12	13	15	17	8	10	9	9	10	8
	S.D.	22	21	23	32	28	29	21	23	20	24	31	26	21	21	19	26	23	24	18	21	20	19	23	20
Special teacher 7 or more students	Mean	8	7	10	7	13	11	1	1	1	1	2	2	6	5	5	4	6	7	0	0	1	2	2	1
	S.D.	22	18	22	17	28	27	4	7	7	8	18	11	18	15	15	13	19	21	4	4	5	15	14	8
Special teacher 1–6 students	Mean	5	9	10	13	16	11	1	1	2	3	3	2	3	4	7	10	8	6	0	0	1	1	1	0
	S.D.	14	28	20	25	32	26	4	7	12	15	13	9	11	13	19	23	22	19	3	3	4	8	6	3
Aide/assistant 1–10 students	Mean	16	16	18	12	13	10	3	3	3	2	3	1	15	17	14	8	7	8	2	2	2	2	1	1
	S.D.	22	24	24	20	25	18	11	11	11	9	11	6	21	21	20	16	17	18	9	8	7	7	8	4
Tutor/volunteer individual	Mean	2	2	1	1	2	2	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1
	S.D.	6	5	4	5	5	6	4	4	4	6	4	4	5	3	5	4	5	6	4	3	3	4	3	4
Independent, programmed material	Mean	2	3	4	8	8	10	1	3	3	4	5	5	2	7	5	8	8	9	1	3	3	5	4	7
	S.D.	7	10	14	24	19	23	6	11	10	13	15	20	7	18	16	22	20	23	7	12	11	14	15	24
Independent, nonprogrammed material	Mean	44	48	46	50	42	39	57	56	58	50	46	42	45	50	55	55	41	42	59	60	61	55	47	41
	S.D.	31	28	33	35	34	32	40	33	37	37	35	40	28	26	32	36	33	33	35	34	36	37	36	39

Table C-3

Mean Hours of Reading Instructional Services Received by Selectees and Students in Non-CE Schools

Reading Service	Percent Poverty		Low-Achieving Selectees						Low-Achieving Students in Non-CE School						Regular-Achieving Selectees						Regular-Achieving Students in Non-CE School					
			Grade						Grade						Grade						Grade					
			1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	Low	N=	542	719	644	619	608	693	339	283	242	273	315	466	662	658	565	549	386	413	619	600	727	752	803	1052
	Med	N=	537	834	852	681	900	650	113	90	60	63	56	58	592	397	376	294	264	235	112	83	64	62	49	56
	High	N=	274	381	477	422	322	341	6	N/A	4	N/A	N/A	N/A	282	137	151	154	86	67	12	N/A	9	N/A	N/A	N/A
Classroom teacher 21+ students	Low	Mean	27	33	23	21	36	35	66	33	35	57	53	46	31	30	20	25	46	42	76	32	48	60	60	69
	Med	Mean	43	27	38	33	26	14	23	21	17	40	8	52	32	35	45	36	21	14	27	23	9	49	26	35
	High	Mean	50	14	36	53	70	46	84	N/A	6	N/A	N/A	N/A	52	19	29	28	45	24	83	N/A	0	N/A	N/A	N/A
Classroom teacher 14–20 students	Low	Mean	13	11	9	12	11	11	10	18	17	25	15	17	14	14	15	16	13	14	15	21	18	20	11	14
	Med	Mean	9	8	9	12	13	17	20	53	58	49	43	10	10	12	9	10	15	15	27	24	25	38	11	7
	High	Mean	11	7	13	16	16	9	0	N/A	9	N/A	N/A	N/A	11	4	17	17	13	6	0	N/A	10	N/A	N/A	N/A
Classroom teacher 7–13 students	Low	Mean	59	48	38	35	27	22	72	74	45	34	34	20	61	76	47	48	34	25	69	75	39	24	19	10
	Med	Mean	54	55	50	46	47	49	80	50	61	15	17	14	61	75	76	51	57	63	88	73	101	17	36	21
	High	Mean	38	64	41	36	21	25	66	N/A	0	N/A	N/A	N/A	48	57	46	46	22	19	50	N/A	0	N/A	N/A	N/A
Classroom teacher 1–6 students	Low	Mean	54	50	40	29	20	26	29	34	43	16	18	14	50	31	33	22	16	18	26	20	25	9	21	13
	Med	Mean	46	44	40	34	26	23	29	26	46	68	61	72	39	33	29	30	12	18	23	36	52	73	63	58
	High	Mean	42	34	28	23	22	23	10	N/A	64	N/A	N/A	N/A	44	43	21	21	39	29	23	N/A	52	N/A	N/A	N/A
Special teacher 7 or more students	Low	Mean	9	9	14	9	10	18	1	1	1	0	0	12	9	7	10	8	8	7	0	0	0	0	0	7
	Med	Mean	9	17	15	15	14	20	0	0	0	0	0	0	11	14	14	10	13	13	0	0	1	0	0	0
	High	Mean	19	23	20	13	18	29	0	N/A	0	N/A	N/A	N/A	20	18	16	11	3	3	0	N/A	0	N/A	N/A	N/A
Special teacher 1–6 students	Low	Mean	28	39	38	37	29	23	1	7	4	5	3	5	25	23	25	23	13	13	1	1	1	1	1	0
	Med	Mean	20	23	24	23	24	24	1	0	1	1	1	1	19	15	14	17	13	19	1	0	1	0	0	0
	High	Mean	9	20	15	15	12	9	0	N/A	0	N/A	N/A	N/A	11	18	7	8	5	6	0	N/A	1	N/A	N/A	N/A
Aide/assistant 1–10 students	Low	Mean	23	14	19	11	9	9	9	4	8	0	2	1	20	15	15	8	6	4	6	2	4	0	1	0
	Med	Mean	23	24	24	17	17	12	0	0	4	0	0	0	21	19	13	15	13	10	0	6	3	0	0	0
	High	Mean	35	25	25	21	29	26	0	N/A	0	N/A	N/A	N/A	35	23	33	26	14	13	0	N/A	0	N/A	N/A	N/A
Tutor/volunteer individual	Low	Mean	6	3	3	2	1	1	6	2	1	1	2	0	5	3	2	1	0	1	6	4	0	0	1	0
	Med	Mean	2	2	1	2	2	2	5	2	7	2	1	1	1	1	2	1	2	2	4	12	5	1	0	1
	High	Mean	2	1	2	1	2	2	0	N/A	0	N/A	N/A	N/A	1	1	3	3	5	2	0	N/A	0	N/A	N/A	N/A
Independent, programmed material	Low	Mean	16	13	8	6	8	6	3	3	1	7	13	7	8	7	6	4	8	4	5	6	1	10	12	12
	Med	Mean	2	6	7	9	9	12	0	0	2	1	18	27	4	6	8	12	13	16	0	0	1	7	23	27
	High	Mean	13	8	8	12	14	18	0	N/A	4	N/A	N/A	N/A	10	11	14	23	23	41	0	N/A	3	N/A	N/A	N/A
Independent, nonprogrammed material	Low	Mean	84	78	71	56	49	40	108	85	74	53	51	40	85	75	87	59	51	35	95	97	76	61	51	34
	Med	Mean	77	65	62	55	47	46	65	79	97	58	69	82	68	81	68	71	58	51	59	107	119	68	90	122
	High	Mean	66	55	43	57	49	58	118	N/A	95	N/A	N/A	N/A	62	77	52	69	53	63	117	N/A	107	N/A	N/A	N/A
Total Hours Reading	Low	Mean	319	297	264	218	200	191	305	261	228	198	190	163	308	281	261	214	195	164	299	258	213	185	176	161
	Med	Mean	287	272	269	246	226	220	227	231	293	233	217	260	268	292	278	254	219	222	237	283	318	252	249	271
	High	Mean	288	250	231	250	254	245	278	N/A	177	N/A	N/A	N/A	295	271	239	253	221	207	272	N/A	174	N/A	N/A	N/A

Table C-4

Mean Hours of Math Instructional Services Received by Selectees and Students in Non-CE Schools

			Low-Achieving Selectees						Low-Achieving Students in Non-CE School						Regular-Achieving Selectees						Regular-Achieving Students in Non-CE School					
	Percent Poverty		Grade 1	2	3	4	5	6	Grade 1	2	3	4	5	6	Grade 1	2	3	4	5	6	Grade 1	2	3	4	5	6
	Low	N=	261	294	296	342	338	435	358	279	277	309	332	479	421	317	338	371	315	303	600	600	692	716	786	1039
	Med	N=	405	416	539	457	563	449	115	89	72	68	64	67	325	359	208	251	233	264	107	83	51	56	40	46
Math Service	High	N=	277	236	340	281	196	172	6	N/A	6	N/A	N/A	N/A	199	125	141	161	94	75	12	N/A	8	N/A	N/A	N/A
Classroom teacher 21+ students	Low	Mean	31	41	38	40	55	40	82	84	58	73	70	76	27	47	50	44	64	47	64	77	66	79	78	88
	Med	Mean	47	51	73	54	45	31	51	20	31	52	15	30	43	37	62	69	42	25	60	28	53	49	18	36
	High	Mean	58	40	50	70	54	54	136	N/A	0	N/A	N/A	N/A	49	46	37	67	72	63	138	N/A	2	N/A	N/A	N/A
Classroom teacher 14–20 students	Low	Mean	20	21	14	16	10	10	14	15	26	19	13	9	27	21	12	14	11	11	15	8	14	17	8	3
	Med	Mean	10	8	12	13	11	21	11	35	35	31	36	5	11	12	16	14	8	24	10	18	15	15	14	6
	High	Mean	5	10	8	11	11	6	0	N/A	26	N/A	N/A	N/A	5	8	8	5	8	6	0	N/A	23	N/A	N/A	N/A
Classroom teacher 7–13 students	Low	Mean	11	11	15	20	12	13	10	14	12	15	17	21	20	13	23	29	14	19	8	14	8	9	10	14
	Med	Mean	17	22	16	15	30	23	5	9	22	10	24	22	19	26	20	13	35	31	6	10	23	15	42	25
	High	Mean	19	10	23	10	14	5	0	N/A	2	N/A	N/A	N/A	14	5	20	11	8	2	0	N/A	0	N/A	N/A	N/A
Classroom teacher 1–6 students	Low	Mean	17	12	15	20	13	20	14	7	11	6	16	12	11	10	10	16	11	17	9	5	10	6	15	11
	Med	Mean	14	10	15	16	19	20	22	26	36	34	48	51	14	8	13	10	20	18	13	24	25	64	58	32
	High	Mean	15	13	15	19	18	19	0	N/A	15	N/A	N/A	N/A	17	16	14	11	16	13	0	N/A	16	N/A	N/A	N/A
Special teacher 7 or more students	Low	Mean	2	5	2	2	7	4	0	0	0	0	1	5	2	3	1	1	4	2	0	0	0	0	0	5
	Med	Mean	8	9	11	11	14	12	0	0	0	0	0	0	8	5	9	7	8	9	0	0	0	1	0	0
	High	Mean	14	6	15	6	19	24	0	N/A	0	N/A	N/A	N/A	12	8	9	6	9	18	0	N/A	1	N/A	N/A	N/A
Special teacher 1–6 students	Low	Mean	6	6	11	16	17	11	1	1	1	3	1	1	4	3	7	9	6	8	0	0	0	0	1	0
	Med	Mean	6	10	12	14	14	14	1	0	0	0	1	0	3	5	8	12	8	6	0	0	0	0	0	0
	High	Mean	2	10	6	9	17	5	0	N/A	0	N/A	N/A	N/A	1	2	5	8	12	2	0	N/A	2	N/A	N/A	N/A
Aide/assistant 1–10 students	Low	Mean	13	11	12	8	4	7	6	1	1	1	3	0	9	9	8	4	2	3	2	0	0	0	0	0
	Med	Mean	13	20	18	9	17	13	0	1	3	0	0	0	13	24	15	8	11	12	1	5	2	0	0	0
	High	Mean	24	17	25	22	18	11	0	N/A	0	N/A	N/A	N/A	29	14	25	16	14	8	0	N/A	0	N/A	N/A	N/A
Tutor/volunteer individual	Low	Mean	3	4	1	1	2	1	1	1	0	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1
	Med	Mean	1	1	1	1	1	3	0	1	3	1	0	1	1	0	1	0	1	1	0	3	1	0	0	1
	High	Mean	2	1	2	2	3	3	0	N/A	0	N/A	N/A	N/A	1	1	5	2	3	5	0	N/A	0	N/A	N/A	N/A
Independent, programmed material	Low	Mean	1	3	3	2	7	8	0	0	4	1	4	2	2	8	4	3	7	5	1	1	3	1	3	2
	Med	Mean	0	3	2	5	5	9	0	0	2	2	11	26	0	5	2	5	4	11	0	0	1	3	14	15
	High	Mean	5	4	7	21	19	18	0	N/A	0	N/A	N/A	N/A	5	9	15	22	20	18	0	N/A	0	N/A	N/A	N/A
Independent, nonprogrammed material	Low	Mean	42	49	57	54	47	40	52	61	60	54	44	34	44	48	59	57	39	42	60	58	60	56	48	35
	Med	Mean	43	46	44	47	42	38	45	42	64	47	56	58	42	49	54	50	47	40	40	65	78	64	59	64
	High	Mean	48	51	40	50	34	40	0	N/A	62	N/A	N/A	N/A	51	61	46	55	31	46	0	N/A	58	N/A	N/A	N/A
Total Hours Math	Low	Mean	146	162	169	179	174	154	179	183	174	173	170	162	148	164	175	180	161	155	160	164	162	169	165	160
	Med	Mean	160	181	203	186	196	184	135	135	197	176	192	193	154	171	199	190	183	178	131	152	199	211	206	179
	High	Mean	192	164	190	221	208	185	136	N/A	106	N/A	N/A	N/A	184	170	185	203	192	182	138	N/A	102	N/A	N/A	N/A

APPENDIX D: SUPPLEMENTARY TABLES FOR CHAPTER 6

Table D-1

Mean Hours per Year of Reading Instructional Services Received by Regular and CE Per-Pupil Expenditure Level, CE Type and Grade

CE Selection Categories			Expenditure Categories																							
			Low-Regular Low-CE						Low-Regular High-CE						High-Regular Low-CE						High-Regular High-CE					
		Grade	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Title I Selectees	*	N=	342	376	300	201	231	220	604	653	820	552	421	408	359	338	323	346	332	273	403	469	472	476	486	271
Other CE in Title I School	**	N=	108	101	92	139	157	227	210	246	202	169	121	153	415	375	330	283	291	289	110	139	116	122	88	81
Other CE in Other- CE School	***	N=	241	225	220	141	129	122	111	139	122	127	155	158	121	127	109	96	116	124	89	118	104	165	152	152
Classroom teacher 21+ students	*	Mean	35	24	16	37	17	14	38	26	33	39	36	24	52	21	27	15	43	21	43	41	48	47	55	39
	**	Mean	13	16	6	13	30	38	31	52	18	31	14	26	39	15	22	14	46	40	64	50	30	37	17	29
	***	Mean	31	13	33	23	33	58	4	41	101	46	41	13	29	30	25	36	24	30	15	8	3	22	18	29
Classroom teacher 14-20 students	*	Mean	7	9	4	8	16	7	9	10	13	11	23	15	20	6	8	24	12	18	15	13	13	22	12	15
	**	Mean	9	2	2	8	1	1	11	11	9	5	2	3	7	9	10	7	22	26	52	10	4	3	10	8
	***	Mean	7	9	9	12	7	9	17	29	34	21	2	2	0	8	17	16	11	12	1	15	5	9	13	29
Classroom teacher 7-13 students	*	Mean	36	53	35	34	15	26	68	64	48	38	28	53	49	65	50	52	32	26	43	47	48	38	39	37
	**	Mean	35	44	37	23	44	26	54	58	53	63	43	52	87	91	70	73	49	27	59	66.	50	22	35	26
	***	Mean	56	72	44	31	34	18	40	74	46	54	62	60	58	36	26	21	46	22	24	19	39	32	31	9
Classroom teacher 1-6 students	*	Mean	59	23	32	27	25	33	34	40	30	27	28	21	46	41	38	23	19	24	42	54	36	31	20	30
	**	Mean	38	33	31	34	22	10	47	35	43	34	29	21	49	34	30	25	15	27	33	51	41	44	27	22
	***	Mean	45	37	29	28	15	9	53	12	23	13	6	13	88	55	54	25	28	25	59	70	59	20	31	23
Special teacher 7 or more students	*	Mean	4	20	8	9	12	19	26	27	22	21	20	33	10	12	15	8	8	4	12	13	19	10	12	18
	**	Mean	9	1	2	1	3	43	11	5	7	5	33	12	0	1	4	6	4	2	14	18	16	12	19	15
	***	Mean	8	10	15	9	10	4	3	3	15	11	18	5	18	7	1	8	3	11	0	3	15	18	12	26
Special teacher 1-6 students	*	Mean	19	20	20	20	23	32	25	34	24	25	25	23	29	25	29	24	20	20	33	35	25	37	26	28
	**	Mean	29	36	43	11	7	8	6	4	7	6	15	13	6	10	11	12	9	4	8	34	41	38	38	29
	***	Mean	22	30	30	42	37	34	15	16	27	3	10	8	26	40	25	48	15	18	9	23	20	11	15	11
Aide/assistant 1-10 students	*	Mean	44	16	27	20	16	13	25	26	25	18	15	9	19	19	21	14	15	15	21	19	20	16	28	23
	**	Mean	38	18	11	11	6	4	33	30	34	24	16	25	27	17	13	7	4	4	3	13	15	4	12	3
	***	Mean	20	21	15	10	6	3	8	5	9	5	11	18	11	6	4	1	9	2	24	11	36	30	18	17
Tutor/volunteer individual	*	Mean	5	3	3	2	1	1	2	1	2	2	2	2	2	2	3	2	1	2	4	2	1	1	1	1
	**	Mean	5	0	0	1	0	1	1	1	2	1	0	1	7	2	1	1	2	0	3	3	2	0	0	0
	***	Mean	1	5	1	2	1	1	1	0	0	1	11	8	3	4	2	3	0	1	5	3	3	3	5	3
Independent, programmed material	*	Mean	11	14	6	5	10	16	9	6	7	12	10	8	5	16	13	10	6	6	14	9	5	5	12	9
	**	Mean	7	11	2	1	11	6	8	8	22	8	3	14	1	1	5	5	5	2	0	3	7	4	14	31
	***	Mean	4	9	5	9	5	15	0	1	0	11	2	12	18	6	7	2	2	4	33	17	18	33	45	38
Independent, non-programmed material	*	Mean	64	56	63	66	49	43	78	64	50	49	42	46	73	70	68	69	45	37	64	65	63	48	45	59
	**	Mean	47	55	80	79	48	43	58	89	72	37	33	61	100	94	101	88	82	35	62	69	69	53	51	44
	***	Mean	89	74	58	64	51	45	86	89	86	50	59	49	76	101	62	47	56	44	87	58	55	66	41	38

Table D-2

Mean Hours per Year of Math Instructional Services Received by Regular and CE Per-Pupil Expenditure Level, CE Type and Grade

CE Selection Categories			Expenditure Categories																							
			Low-Regular Low-CE						Low-Regular High-CE						High-Regular Low-CE						High-Regular High-CE					
		Grade	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Title I Selectees	*	N=	125	266	147	102	59	86	426	311	531	381	368	310	181	154	123	188	200	180	170	158	209	246	218	95
Other CE in Title I School	**	N=	166	133	114	154	198	186	164	167	124	131	64	99	339	302	243	218	203	272	91	44	86	149	85	95
Other CE in Other- CE School	***	N=	168	121	155	88	91	68	87	73	68	82	112	135	26	44	75	48	83	73	84	70	82	145	129	158
Classroom teacher	*	Mean	23	48	19	39	22	26	61	46	62	58	45	39	59	45	31	35	58	29	43	85	71	79	78	33
21+ students	**	Mean	51	21	16	53	59	24	39	27	67	75	35	43	28	45	62	28	56	50	27	22	59	67	54	35
	***	Mean	49	43	51	69	66	55	5	24	120	97	57	68	47	74	59	52	18	24	6	1	27	23	19	28
Classroom teacher	*	Mean	7	12	7	17	12	6	9	14	11	14	13	25	30	38	14	12	4	16	5	10	11	19	17	25
14-20 students	**	Mean	12	18	21	6	1	2	12	2	16	18	2	46	20	10	16	21	14	7	39	64	3	8	30	12
	***	Mean	9	7	6	5	5	5	14	4	14	7	0	2	1	3	17	10	10	11	8	5	2	4	10	18
Classroom teacher	*	Mean	15	7	32	25	18	14	20	19	22	16	23	26	6	4	24	10	22	12	23	13	13	12	28	18
7-13 students	**	Mean	2	24	11	16	16	25	30	32	14	7	44	11	17	7	10	55	14	12	11	1	19	10	6	29
	***	Mean	21	40	32	5	15	9	24	62	16	9	31	17	42	11	14	1	28	15	8	1	10	16	14	14
Classroom teacher	*	Mean	26	6	23	8	13	28	8	11	11	29	23	20	17	13	16	14	13	23	10	7	13	8	7	23
1-6 students	**	Mean	12	7	24	4	19	23	10	12	11	5	24	5	12	12	9	18	14	25	20	6	18	29	20	22
	***	Mean	12	9	7	11	11	10	38	3	29	10	6	9	15	15	9	14	20	7	21	41	21	17	24	16
Special teacher	*	Mean	2	6	8	7	1	13	20	19	19	10	24	27	3	2	5	6	11	1	19	7	8	10	11	2
7 or more students	**	Mean	1	1	0	0	3	6	3	0	4	3	6	2	0	0	1	1	2	0	2	8	2	1	1	0
	***	Mean	3	2	5	4	2	2	0	4	4	0	8	1	10	21	0	5	6	22	0	0	2	12	16	21
Special teacher	*	Mean	2	4	5	3	3	1	6	16	13	18	25	19	4	6	6	5	9	6	4	11	12	16	20	30
1-6 students	**	Mean	5	8	3	3	5	3	0	1	6	3	15	2	0	0	0	2	2	4	9	12	23	30	12	14
	***	Mean	6	7	9	20	21	23	5	2	4	2	2	2	7	10	10	46	14	14	1	4	13	6	5	5
Aide/assistant	*	Mean	51	16	14	8	14	17	17	19	24	19	12	14	11	13	10	9	12	14	15	15	20	9	29	10
1-10 students	**	Mean	12	17	12	2	5	3	22	37	21	8	0	14	8	6	10	4	3	2	3	11	2	3	6	2
	***	Mean	17	19	13	9	3	3	8	9	8	7	12	18	2	0	2	0	7	2	21	27	38	24	14	9
Tutor/volunteer	*	Mean	2	1	1	0	1	0	1	2	1	2	2	2	1	1	6	3	2	3	2	2	2	1	1	0
individual	**	Mean	1	0	2	0	1	1	0	0	1	1	0	5	4	3	0	1	0	1	0	0	0	0	1	1
	***	Mean	1	3	1	3	1	0	1	0	0	0	2	5	0	0	0	0	0	1	3	5	2	1	6	3
Independent,	*	Mean	1	9	2	5	14	16	6	3	3	14	9	3	0	13	9	7	8	0	0	2	5	3	3	0
programmed	**	Mean	0	0	0	3	2	1	1	1	3	2	11	19	3	5	1	1	13	12	0	0	0	0	2	11
material	***	Mean	0	6	5	3	2	2	0	1	0	17	3	13	0	0	3	1	0	1	4	6	24	32	30	34
Independent,	*	Mean	34	48	56	56	52	53	47	48	35	44	38	30	39	44	43	60	34	39	21	45	47	34	35	43
non-programmed	**	Mean	44	47	61	74	53	58	41	51	42	46	44	25	39	51	60	69	31	38	40	64	57	49	36	47
material	***	Mean	54	42	46	50	44	43	84	54	70	49	68	50	42	36	68	31	53	50	75	78	64	62	40	28

SUBJECT INDEX

Ability Grouping 32-33, 242, 245
Absenteeism (Hours of Instruction Missed) 31, 34-36
Achievement of Basic Skills 207, 210, 263
Activities Missed by Compensatory-Education Students 154, 156
Additional Instructional Personnel 185, 188
AFDC
  See: School Eligibility for Title I Funds
Affective Status of Students 31-33, 36, 52, 263, 292
Attendance Rates 38, 40
Audio-Visual Equipment
  See: Equipment
Average Class Size 240, 242

Belief That School Makes a Difference 242
Busing to Promote Racial Balance 232

Class Size 55-57, 176-178
  See also: Instruction Group Changes
    Instruction Group Selection
    Instruction Group Size
    Instruction Group Type
Collective Bargaining
  See: Teacher Contract Issues
Communications 228-229
Compensatory Education Expenditures 175-177, 202-203, 216-217, 229-230, 242
Compensatory Education Per-Pupil Expenditures - Math 56-59, 61-65, 175-177, 189-192
Compensatory Per-Pupil Expenditures - Reading 56-59, 61-65, 175-177, 189-192
Concentration of Compensatory-Education Students in Classes 54-57

Diagnostic-Prescriptive Instruction
  See: Individual Needs
Discontinuation of Compensatory-Education Services 65-68
Disruption of Instruction 232, 258-259
District Administrative Structure (Top-Heaviness) 224, 226, 235-236
District Compensatory-Education Funds Use 38, 52, 224, 227, 285-291
District Compensatory-Education Programs
  See: School Receipt of Compensatory-Education Funds
    Selection for Compensatory-Education Services
District Control of School Programs 224, 226, 235-236
District Functions 221-222, 224-225
District Parent Advisory Council 246-247
District Participation in Title I 224, 226, 228-229, 246-247
District Receipt of Compensatory-Education Funds 221-226
District Size 204-206, 216-217, 224, 226, 235-236, 252-253
District Testing Frequency 224, 226, 235
District Title I Coordinator 224, 227-229

District Title I Funds-Allocation Procedure 202-203, 211-213
District Title I Funds Use 224, 227-228
District Title I Poverty Criteria, Percent of Students Meeting 205-206
District Title I School Selection Policy 207-208

Early Childhood Experience 31-34, 41, 45, 287
Economic Status of Student 31-34, 38-39, 40-41, 44, 207-208, 210, 255, 286
Enrollment
  See: School Enrollment
Equipment 111-112, 185, 187
Expenditures
  See: Compensatory-Education Expenditures
    Regular-Education Expenditures
Exposure to Math Instruction 31, 34, 36, 61-65, 70-71, 129, 132, 135, 138-141, 149-152, 157-161, 167-175, 266
Exposure to Reading Instruction 31, 34, 36, 61-65, 70-71, 111, 119, 129-131, 133-134, 137-148, 157-167, 265

Federal Compensatory-Education Programs
  See: School Receipt of Compensatory-Education Funds
    Selection for Compensatory-Education Services
Feedback 95, 108-109
Functional Literacy
  See: Practical Achievement

Grade 39, 41, 43-44, 46-50, 52, 54-68, 70-126, 129-152, 154, 157-167, 169-173, 189-201, 260-266, 290, 292
Grade Span of School 215, 218, 244-245
Grammar
  See: Reading-Related Activities
    Teaching Approach
Guidance and Counseling Services 31, 34, 36, 65-66, 196-199

Half-Day Services 235
Health and Nutrition Services 31, 34-36, 65-66, 196, 200
Homework 95, 110
Hours of Math Instruction Offered 58-60, 62, 64, 176, 178, 241-242, 245, 263-264, 266
Hours of Reading Instruction Offered 54-59, 62-63, 176, 178, 192-193, 195, 241-242, 245, 263-265

Individual Needs 91, 93
Individualization of Instruction
  See: Individual Needs
    Instruction Group Size
    Instruction Uniformity
Individualized Instruction Approach - Math 241-242
Individualized Instruction Approach - Reading 241-242
Inservice Training
  See: Teacher Experience and Training
Instruction Group Changes 87-90, 185-186

Instruction Group Size 31, 34-36, 54-59, 63, 70-79, 125-126, 134, 136, 145-147, 150-152, 158-166, 169-173, 192-193, 265-266
Instruction Group Type 87-90, 179, 184-185
Instruction Uniformity 91, 93-94
Instructional Objectives
  See: Learning Activities
Intergroup Relations at School 257-259

Learning Activities 95-107, 111, 121, 123-124
Lesson Plans, Use of 91-92
Low Achievers
  See: Percent of Low-Achieving Students

Math Achievement 28, 31-33, 35-36, 47, 128-132, 135, 138-141, 290, 294, 296
  See also: Achievement of Basic Skills
    Student Achievement Level
Minority Enrollment of School 213, 215-217, 241-242, 257-259
Mobility Rate of Students 235, 237, 242

Non-English Speaking Families, Children From
  See: Percent of Non-English Speaking Families
Non-Public School Students 68-69, 204, 212-214

Objectives
  See: Learning Activities

Parent Average Education 232
Parental Involvement in Education 31, 41, 46-47, 235, 255, 260-266
Parent/Community Involvement 213, 216-217, 225, 232, 235, 237, 242, 248-249, 251, 253, 255, 257-259, 263-264
Percent of Compensatory-Education Needy Students Being Served 65-67, 189-190
Percent of Low Achievers Selected for Title I 211-212
Percent of Low Achieving Students 231-233, 242
Percent of Non-English Speaking Families 232, 242
Percent of Poor Selected for Title I 211-212
Percent of Regular Achievers Selected for Compensatory-Education Services 213, 215-220
Per-Pupil Expenditures
  See: Compensatory Education Expenditures
    Compensatory Education Per-Pupil Expenditures - Math
    Compensatory Education Per-Pupil Expenditures - Reading
    Regular-Education Expenditures
Poverty Percent of District 215-217, 224, 226-230, 235-236, 253, 255
Poverty Percent of School 137-152, 215-217, 231-232, 242, 254-255, 257-259 295-296
Practical Achievement 31-33, 36, 47, 50, 263, 291
Principal Experience and Training 235-236, 242
Principal's Instructional Leadership 235, 242, 245
Private Schools
  See: Non-Public Schools

Race/Ethnicity of Student 30-35, 41, 43, 263, 285
Racial/Ethnic Interactions
  See: Intergroup Relations at School
Reading Achievement 28, 31-33, 35, 47, 49, 128-131, 133, 138-149, 293, 295
Reading-Related Activities 119
Receipt of Compensatory-Education Funds (By School) 31, 175-182, 185-188, 207, 209, 213, 215-217, 224, 226, 231-234, 247-251, 257-259
Regular-Education Expenditures 202-203, 216-217, 232, 242
Regular-Education Expenditures - Math 61-65, 170-173
Regular-Education Expenditures - Reading 61-65, 163-166

Saturation of Compensatory-Education Services
  See: Concentration of Compensatory-Education Students in Classes
    Percent of Regular Achievers Selected for Compensatory-Education Services
School Central Facilities 185-186
School Climate 232, 242
School Compensatory-Education Student Selection Policy 209-210
School Eligibility for Title I Funds 205-208, 232
School Enrollment (Grades 1-6) 176-188, 215-217, 232, 242
School Staff (Ratio of Support to Teaching Personnel) 232, 235, 242
Selection for Compensatory-Education Services 28, 30-31, 34, 36, 40-41, 43-49, 50-52, 54-57, 63-67, 70-86, 111, 119, 128-152, 155-175, 192-201, 205-211, 285-287, 290-296
Specialist Teachers 178
  See also: Additional Personnel
Spelling
  See: Reading-Related Activities
    Teaching Approach
Stability of School for Long-Term Programs 232, 258
Staff/Student Ratio 235, 242
State Compensatory-Education Programs
  See: School Receipt of Compensatory-Education Funds
    Selection for Compensatory Services
Structure in Instruction 242
Student Assignment and Placement Policies 179-180
Student Control of Instruction 235, 242
Student Mobility
  See: Mobility Rate of Students
    Stability of School for Long-Term Programs
Student Teachers or Tutors
  See: Additional Personnel
Summer Intellectual Experience 31-33, 47-48, 262-263, 289

Targeting of Compensatory-Education Services
  See: Percent of Compensatory-Education Needy Students Being Served
    Percent of Low-Achievers Selected for Title I
    Percent of Poor Selected for Title I
    Percent of Regular Achievers Selected for Compensatory-Education Services
Teacher Contract Issues 235

Teacher Experience and Training 235-237, 242, 245, 258
Teachers (of Math) 31, 34-36, 64, 73, 80-86, 126, 135, 145-147, 149-152, 158-161, 167-174, 196-198, 264, 266, 296
Teachers (of Reading) 31, 34-36, 63, 73-79, 125, 133, 141-144, 161-167, 196-197, 265, 295
Teacher's Judgment of Compensatory-Education Need 65-68, 207-210
Teacher's Role in Instructional Decision-Making 235, 242
Teaching Aides
  See: Additional Personnel
    Teachers
Teaching Assistants
  See: Additional Personnel
    Teachers
Teaching Approach in Reading 113-118, 121-122
Tests for Compensatory-Education Selection 235
Textbooks, Levels 120
Title I
  See: School Receipt of Compensatory-Education Funds
    Selection for Compensatory-Education Services
Title I Expenditures for Non-Public School Services 204, 212-214
Tracking
  See: Ability Grouping
    Instruction Group

Vandalism
  See: Disruption of Instruction
Violence
  See: Disruption of Instruction
Vocabulary
  See: Reading-Related Activities
    Teaching Approach in Reading

Writing
  See: Reading-Related Activities
    Teaching Approach in Reading

Years District Has Participated in Title I 228-229, 253